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Seventy problems

John Frank Morrison

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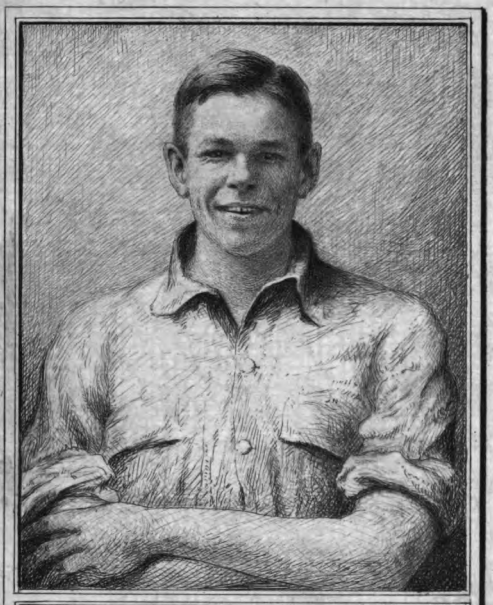

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STEPHEN SPAULDING
1907 – 1925
CLASS of 1927
UNIVERSITY OF MICHIGAN

The Bequest of
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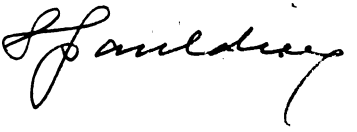

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SEVENTY PROBLEMS

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SEVENTY PROBLEMS

INFANTRY TACTICS

Battalion, Brigade and Division

BY
JOHN F. MORRISON
LIEUTENANT COLONEL 21st U. S. INFANTRY

U. S. CAVALRY
ASSOCIATION
FT. LEAVENWORTH
1914

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DEDICATED
TO MY FRIENDS
THE STUDENTS AT THE SERVICE SCHOOLS
WHO SOLVED THESE PROBLEMS

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Stephen Spaulding
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PREFACE.

These problems and papers are in the main those given to the classes at the Army School of the Line during the five years I was charged with the conduct of the Military Art Department. They were not written with any idea of publication nor do they form a connected series. Each was intended to inculcate some tactical lesson or lessons which the class at that time seemed to need.

My friend and colleague at the Leavenworth Schools, Captain A. L. Conger, has asked permission to publish these problems in book form, believing that they will be of use to our officers who are studing tactics. I have agreed that he may do so provided he will do the work of preparing them for the printer and reading the proofs, tasks for which I could not now spare the time even had I the inclination.

01-21-49 13RD

It needs to be recalled in reading the problems that they were written while the 1904 Infantry Drill Regulations were still in force and while the company, with a supposed war strength of 128 men, was divided into two platoons of two sections each. Thus the commands and forms of orders will sometimes be found not in accord with present regulations. However, clerical technique is after all a minor consideration and presents no difficulties. The main need of our officers is a knowledge of the fundamental principles of tactics and how to apply them. This knowledge is to be gained, not by studying rules, formulae or "normal" schemes, but by practice in solving problems. Such practice, combined with knowledge of human nature and common sense, is what makes the tactician.

JOHN F. MORRISON.

Vancouver Barracks, 1914.

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PART I

THE BATTALION IN COMBAT

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APPLIED MINOR TACTICS*

APPLIED Minor Tactics is a big subject to treat in thirty minutes. It involves the map problem, terrain exercise, war game, maneuver and battle. The same general method, however, should be used in all. All others are but a preparation for battle and are valuable only in so far as they conform in principle to what should be done in battle. My talk will consist in giving a few hints that should be followed in the solution of such problems.

Tactical Exercises

The map problem and terrain exercise are the simplest and are generally the ones to begin with: you have but one phase of an action and your information is reliable. The war game comes next in difficulty: one phase of action follows another rapidly and, owing to your opponent, conditions may change; your information is not so complete and reliable; but your troops, being slips of paper, are completely subject to your will; when ordered to a certain place, they cannot misunderstand your instructions and go wrong, they do not straggle or get careless, they are perfect troops. In the maneuver the problem is the same, except that you are dealing with men and the control is not so perfect, that there is much more chance for mistakes, and that the poor work of subordinates may ruin your plan.

Their Relation to War

A battle is but a maneuver to which is added great physical danger and more or less excitement. It is the same game; but in the maneuver you are playing for matches, in battle, for human lives. The responsibility resting on an officer in war is great. His mistakes are paid for in blood. For a man to seek a command in war beyond his capabilities is no less criminal than for one with no knowledge of a locomotive

*Paper read before the St. Louis convention of the National Guard Association of the United States, in 1910.

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or of railroading to attempt to run the engine of an express on a busy line. It stands us all in hand to fit ourselves as best we can for such responsibilities as will come to us in the next war.

Maneuvers and Map Problems

As von Schellendorff says, "the best preparation for war is maneuver work," and the history of Prussia shows that her great military successes followed periods of great attention to maneuvers and that her disastrous defeats came when this work had been neglected. The small maneuver is of vital importance: you must have good companies, battalions and regiments before you can have a good army. The map problem and war game are but aids to maneuvers: they can be practiced without troops and when maneuvers are impossible; their practice will make the maneuvers better, for you thus learn the principles of tactics and in the quickest way.

Maneuvers that violate every tactical principle are harmful unless the lessons taught by our mistakes are brought home to us. The hints I offer here apply equally to all tactical exercises. In so short a paper the whole field of tactics cannot be covered but I have tried to invite attention to those points I believe most important to consider, judging by the work of our troops, both regular and state.

In solving a tactical problem, whether on the map or on the ground, with or without troops, whether it be a maneuver or a battle, you should perform an operation that may be divided as follows: estimating the situation; forming your decision or plan; then giving the necessary order to carry out your plan.

Estimate of the Situation

The estimate of the situation is the first step. It is important. Do not get the idea that it applies only to map problems: it applies to all. In estimating the situation the first step is to determine your mission, what you are to do, what you are to accomplish. Consider next your own force and that of the enemy; that is, his probable strength and how it compares

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with yours. Consider other conditions favorable and unfavorable, such as the relative quality of troops. Consider what the enemy will probably do. Consider the terrain in so far as it affects the problem. Now consider the different courses open to you with the advantages and disadvantages of each. You are now ready to come to a decision which is a clear, concise statement of what you propose to do and how you propose to do it. This is called estimating the situation.

I have heard the objection raised that this is too long a process, that, except in map problems, you must act more promptly than this would allow. The objection is not well taken. It might be if it were contemplated to write it all out; but such is not the case. The mind works rapidly in accustomed channels. The child beginning the study of arithmetic is very slow in determining the sum of 7, 8 and 9, but later the answer is announced almost at sight. The same is true in tactical problems. Solving them may be a slow process at first but, with a little practice, your decision is reached very quickly, is likely to be correct, to be one you will not want to change every few minutes. An accountant who guessed at the sum of a column of figures instead of correctly adding them would not be apt to ball up his books more than would a commander his tactical work if he failed to estimate properly his situation. After writing this estimate out for a few times carefully it soon becomes unnecessary to do so. The boy soon gets past the point where he must count on his fingers. The important thing is to come to a clear and correct decision, to do it promptly and then to execute it vigorously.

The Decision

Now for a few hints as to your plan or decision. They are not a *précis* of tactics but a few important points to be borne in mind. They cover the most frequent tactical sins of the maneuvers.

The new Japanese Field Service Regulations contain the following: "There are two things that should be avoided above all by military commanders—inaction and hesitation.

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To act resolutely even in an erroneous manner is better than to remain inactive and irresolute." Frederick the Great expressed it in fewer words: "Don't haggle." Having settled on a plan, push it through, don't vaccilate.

Make your plan simple. No other has much show. Complicated plans often look well on paper and a cheap victory seems offered; but in war and even in maneuvers they seldom work out. They require many people to do the right thing at the right time and this under conditions of excitement, danger and confusion. They generally fail. Better select a simple plan that you know you can execute; it will be less costly in the end. On the field, in the heat and excitement of battle, you can do little maneuvering; the attack once launched, all you can do is to let it take its course, influencing it of course by the judicious use of the reserves. It is wisely said that a line once thoroughly committed to the attack under modern conditions has but three things it can do, push forward, halt, or retreat.

Losses in Battle

Hard and fast rules cannot generally be given in tactics; but we must bear in mind what gives victory: the inflicting on the enemy a loss which he cannot stand before he can do the same to us. This necessary loss varies; it is subject to many conditions. Every body of troops, like all timber, has its breaking point. If we can force the enemy's loss to his breaking point before he pushes us to ours we win. "Weapons improve but human nature remains the same." It takes no more, if as much, killing to break a body of troops today as fifty years ago. Do not confuse losses in battle with breaking losses. Remember that, when a force breaks, turns its back on a nearby enemy, its losses pile up very rapidly, and generally exceed all losses previous to the break. This breaking loss would soon come if we could shoot on the battlefield as we do on the target range, but we cannot even approximate it.

There are many causes tending to drag down our score on the battlefield, one of the most potent being the effect

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of the enemy's fire. It is cited as a physiological fact that fear and great excitement cause the pupil of the eye to dilate and thus impair accuracy of vision and hence shooting. It is well established that the effectiveness of the fire of one side is reduced proportionately to the effectiveness of that of the other. Bear in mind then these two points: we must get the enemy's breaking point before he gets ours; and, the more effective we make our fire, the less effective will be his. Expressed in another way—to win we must gain and keep a fire superiority.

Fire Superiority

This generally means more rifles in action; yet a fire badly controlled and directed, though great in volume, may be less effective than a smaller volume better handled. The firing line, barring a few exceptional cases, should, therefore, be as heavy as practicable consistent with the men's free use of their rifles. This has been found to be about one man to the yard. In this way you get volume of fire and the companies do not cover so much ground that their commanders lose their power to direct and control. If it becomes necessary to hold a line which is too long for the force available, it is then better to keep the men close together and leave gaps in the line. The men are thus much better controlled, the fire is better directed, the volume is the same, and the gaps are closed by the cross fire of adjacent parties.

Frontal and Flank Attack

The Field Service Regulations tell us to attack the front and a flank and that straight frontal attacks are too costly. This has caused much misunderstanding, but if you take it as really meant it is all right. Frontal attacks are in one sense of the word about the only kind you will ever make. If the enemy knows the game, when your flank attack is delivered he will be there to meet you and, locally, your attack will be frontal. But your entire line will be longer and, being enveloping, will have a better direction.

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An enveloping fire is very desirable but not always obtainable and you may have to attack squarely in front. Such attacks are not hopeless and need not be excessive in cost. In planning an attack, then, try to bring about an enveloping attack, if practicable without too wide dispersion; but do not give up a proper attack simply because it must be frontal. Better the latter than the enveloping attack if the separation of the parts would be too great. For a regiment this extension should seldom exceed 800 yards between extended flanks, and a mile may be taken as the extreme for a brigade. A turning movement therefore is not allowable in small commands.

Reserves

In your plan provide ample reserves at the beginning. In the attack you must keep your firing line up to its full strength if you expect to ca ry it forward to victory. This will require many men, for you must replace the killed, wounded, skulkers and the exhausted. You must have reserves to meet unexpected developments, to extend your line to meet a corresponding extension of the enemy, to protect yourself from a flank attack by detachments of the enemy, if defeated to cover your withdrawal, if victorious to reap the fruits of victory. In a real attack, vigorously pushed, the men at first on the firing line will vary from one-half to one-tenth of the entire force. A small command naturally does not require as much reserve as a big one. Reserves is used here in its broadest sense and includes local supports.

Flank Protection

You must look out for your flanks. If both your flanks are absolutely secure, as in some defile, the very selection of the position looks out for them. Generally detachments must be sent to one or both flanks to secure you against an unexpected attack from that direction. Remember that to be caught unawares is an unpardonable sin. In small commands these flanking groups will vary from two men to a company, depending on whether they are merely to observe and report or to delay the enemy.

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Avoid dispersion and undue extension. Do not make a detachment before a battle unless necessary and then make it as small as possible. This is one of the maxims of Napoleon repeated in other words by Clausewitz and many other authorities since. Undue extension of your line is but another form of dispersion and is equally bad. A long thin line is helpless before an enemy who plays the game. Do not be in too big a hurry to commit more men than necessary to the action. Remember that shifting men once engaged is very difficult and often impossible.

Dispersion

In a map problem the information of the enemy is given you; you cannot reconnoiter to gain it. With troops either in battle or maneuver it takes good reconnaissance to gain very accurate knowledge of the enemy. You will guess wrong very often. It is, therefore, generally better to put in at first only as many men as necessary to develop fully the hostile strength and position and increase the force engaged as your information becomes positive. Keep up your reconnaissance. Here remember the words of Frederick the Great, "Don't haggle."

Reconnaissance

Carry out your plan vigorously. Put in enough men to do the work and to do it promptly just as soon as you *know* what is to be done and where. Do not send them in in driblets. If you have a choice in the direction your attack is to take study the ground carefully and give it that direction which is most to your advantage. Generally this will be where the most cover is offered you: but not always. There will sometimes be other reasons that outweigh the advantage of cover. Good sense alone can determine. If you are supported by artillery ask yourself: Where can it help the most and the longest? A direction of attack may be good as to cover but be so situated as to mean ruin in case of a defeat as, for instance, where it puts an impassable obstacle directly in your rear. The enemy also should be considered in this connection; how can you do him the most harm?

The Plan

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Having completed your estimate and made your plan, it must now be expressed in the form of an order. No matter how perfect your plan, if your orders will not cause its execution, you will fail. Your order must give your subordinates sufficient information of the situation and of your plan so that they can clearly understand their mission and this is put first. It must make plain to each what he is to do. It must be clear, concise and definite. In large commands you must state where you will be, and, I might add, then stay there. The better each one understands the whole situation, the better he can play his part. Unexpected things are always happening in war, a subordinate can only act intelligently if he understands your point of view. Make your order short and make it definite. One has no time on the battle field to read unnecessary literary productions. Above all do not give vague orders. Be positive and definite. Do not try to shift responsibility. It is well to follow the form given in Field Service Regulations, but that is not so important as that you fulfill the other requirements.

The Order

To acquire a working knowledge of minor tactics I can only advise practice first with map problems, then with the other forms. Write out your solution at first, check it up for the points on the sheet I have given you and for others you know. Do not follow rules blindly. Remember that common sense and knowledge of men are the best guides.

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Suggestions for Solving Tactical Problems*

I. Estimating the situation:

1. Determine your mission.

2. Consider the forces—your own and the enemy's.

3. Consider conditions—both favorable and unfavorable.

4. Consider what the enemy will probably do.

5. Consider the terrain in so far as it affects the problem.

NOTE.—2, 3, 4 and 5, are not necessarily to be considered in this order.

6. Consider the different courses open to you to carry out your mission with the advantages and disadvantages of each.

7. Now come to a decision. In solving problems give a clear, concise statement of what you propose to do and how you propose to do it.

II. Hints to be considered in forming your plan or decision:

1. Make your plan simple.

2. Bear in mind the necessity for gaining fire superiority.

3. Make your attack enveloping when practicable.

4. Avoid dispersion and unnecessary detachments.

5. Provide for ample reserves properly distributed.

6. Look out for your flanks.

7. Do not be in too big a hurry to commit more men than necessary to the action.

---

*From a lecture to the School of the Line given in 1907.

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8. Remember that a victory is apt to be barren without a vigorous pursuit.

9. Take advantage of the ground.

10. Do not neglect your reconnaissance work.

11. Come to a definite decision and then carry it out vigorously—don't haggle.

III. Expressing the decision in the form of an order:

1. Give your subordinates the necessary information to enable them to understand the situation and to act intelligently.

2. Assign to each subordinate his mission, the part he is to play in the team.

3. Make it clear, concise and definite.

4. In large commands state where you will be.

5. The forms given in Field Service Regulations, in so far as they apply, should be generally followed.

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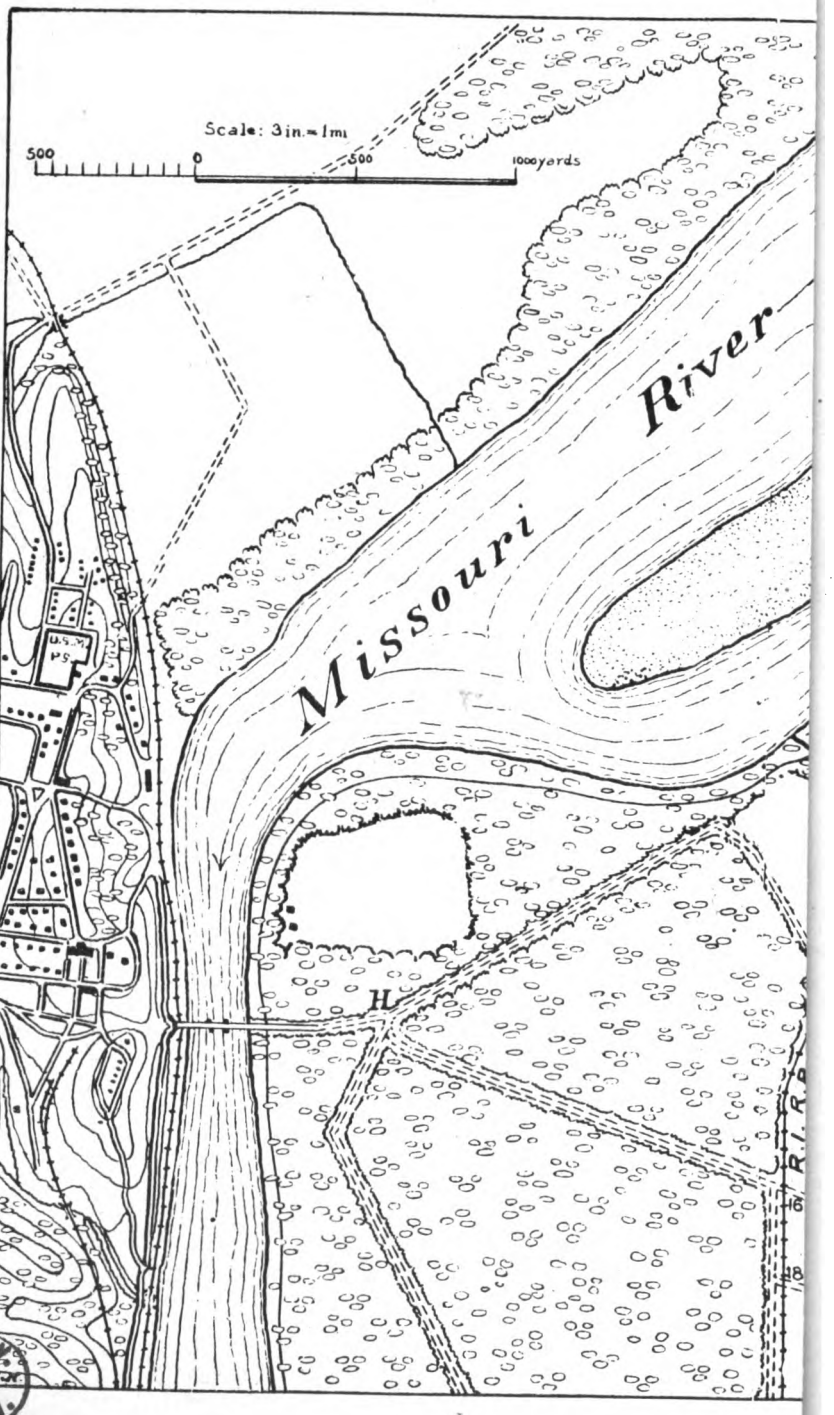

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PROBLEM I*

Over Open Ground

FORT LEAVENWORTH TWO-INCH MAP AND BEVERLY SKETCH

Situation:

The 1st Blue Division at Atchison (30 miles north of Leavenworth) in friendly country has sent the 1st Battalion and Machine Gun Platoon, 1st Infantry, under Major A, to Fort Leavenworth, Kansas. There are attached to the battalion, 2 medical officers, 6 hospital corps men and 8 mounted orderlies. The train consists of 4 small arms ammunition wagons, 1 ambulance and 7 baggage wagons. Major A's command reached Fort Leavenworth on October 11th late in the afternoon.

At 4 A. M. on October 12th, Major A receives the following message from his division commander dated Atchison, 3 A. M.:

> Enemy reported marching from south to concentrate at Kansas City, strength about fifteen thousand of all arms. Most of his force will reach Kansas City at a late hour tonight. It is probable that a cavalry force of about two squadrons has been pushed forward toward Beverly.
>
> It is very important that the railroad junction at Beverly be seized and held before the enemy can reach there in force. Move with your command to Beverly and strongly intrench to hold junction. The division will march at five this morning for Fort Leavenworth.

*From *Studies in Minor Tactics*, published in 1907.

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The railroads between Atchison and Leavenworth and between Beverly and Kansas City have been temporarily disabled and will not be available for several days.

Required:

1. Major A's measures for the march.

Solution:

Major A starts with his command at 6 A. M. for Beverly. At the eastern approach of the Missouri River bridge he leaves Lieutenant C with 2 squads of Company A and 4 mounted orderlies, with orders to provide for the immediate protection of the bridge and to construct trenches and prepare obstacles. He directs that the ambulance and baggage wagons be left with Lieutenant C's detachment until further orders.

Continuation of the Situation:

As the advance guard, Company A (less 2 squads), reaches the bend in the road 1,000 yards northeast of H (sketch), a farmer is met who states that a force of Red cavalry numbering about 100 men reached Beverly about an hour ago.

Major A upon receiving this information directs the senior company commander, Captain B, to take command of the main body and to hasten the march. He then gallops forward to the advance guard to gain a view of the country in front.

From personal observation from the edge of the woods near 14 (sketch), from reports of patrols and from a conversation with the station agent, who has just escaped from Beverly and who corroborates the statement made by the farmer, Major A gains the following information:

The woods on the north side of the R. I. R. R. track have such dense undergrowth that the movement of troops through them would be difficult.

Beet Creek between the pond south of 14 and a

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point east of the Burlington R. R. can be crossed only on the railroad bridge.

The area bounded by the R. I. and Burlington R. R's., Beet Creek and the ravine east of 14, is practically level, having only slight undulations on the surface, and is sown with winter wheat.

The clump of timber southeast of 14 is open but the ravine 200 yards northeast of this timber is dry and would afford good cover for a line of troops.

The farm road leading eastward from 12 to the farmhouse would afford some cover to troops lying down.

The R. I. R. R. is bordered, for a space of 15 or 20 feet on each side, by tall weeds and brush which would afford cover from view but no protection from fire.

The beds of both railroads are raised from 2 to 3 feet.

The enemy has constructed in the southwest angle of the railroad junction a hasty trench about 50 yards west of the Burlington track, extending southward parallel to those tracks for about 100 yards, then bending back to meet the tracks. A similar but much smaller work has been constructed in the northwest angle of the junction.

Required:

2. Estimate of the situation and orders.
3. Conduct of the attack.
4. Measures after the position is taken.

Solution, 2d Requirement:

Major A has at his disposal about 500 infantry and a machine gun platoon. The enemy has on the ground only about 100 men and not all of those are available for dismounted action. Major A considers it probable that the

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Red troops at Beverly have made a night march in order to seize the junction at daybreak, that they would not have been pushed so far forward unless supported by other troops nearer than Kansas City and that they will be supported during the day by other Red cavalry.

Major A believes that he will be able to drive away the Red force now at Beverly and that, if time be available to strengthen the position, he can hold the junction against the enemy's expected reinforcements. He realizes that, to succeed, prompt action is necessary, since hostile reinforcements may arrive very soon.

The Blue division commander evidently expected Major A to reach Beverly before the enemy. This Major A has failed to do; but he believes that the spirit of the division commander's order demands that he attack and seize Beverly and he decides to do so at once. He sends to the division commander a report of the conditions and his intentions.

In forming his plan of attack Major A has very little lattitude. He must push his attack over the open ground between the R. I. R. R. and Beet Creek.

It might seem that the attacking force should advance through the woods north of the R. I. R. R. But, although this course would afford cover for the advance for some distance it is rejected because of the dense undergrowth which makes the woods practically a jungle through which progress would be slow, particularly if some hostile scouts were there encountered, and time is an important factor since, to be successful, the action must be over before reinforcements for the enemy arrive.

Besides, troops advancing through the brush would be badly out of hand by the time they reached the edge of the timber 700 yards from the enemy's position and would still have that 700 yards stretch to cross over ground as open and difficult as any on the south side of the woods.

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For Major A to move his force south of Beet Creek in order to turn the enemy's position from the south is open to the objections that it would uncover the Blue line of retreat, take more time and simply result in a frontal attack from another direction. Moreover, should the enemy's reinforcements arrive before the completion of the movement, they might with their greater mobility cut Major A off entirely from his line of retreat and ruin his command.

A division of the Blue force, sending a part—say two companies—to make a turning movement from the south and holding the rest for a direct movement along the R. I. R. R. is inadmissible. It would cause too great a dispersion of so small a force; it would place an impassable obstacle between the parts of the command, and the part detached for the turning movement would be hopelessly compromised should reinforcements of any size arrive for the enemy after the movement were well under way but before it had been successfully completed. Although in the case of cavalry acting against infantry such a division of the force would often be most advantageous—the superior mobility of the cavalry making it possible for it to reunite in spite of mishap—it is inadmissible for infantry to scatter in this way when opposed to cavalry.

Major A decides to advance directly. By this course the least possible time is lost, his line of retreat is covered and, should it become necessary, he can break off the attack and withdraw to the bridge. If the attack has progressed very far this latter move is likely to be costly but, if Major A keeps his force well in hand during the movement, it can be accomplished.

It now remains for Major A to arrange his attack so as best to accomplish his purpose. He decides to place the machine gun platoon in the weeds and brush on the south side of the R. I. R. R. with two squads of Company A on the north side as a flank guard, to have Company A (less 4 squads) and Company B form the firing line; Company A to advance

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along the R. I. R. R., Company B to take direction at first on the farm building and stacks east of 12 and then to make an enveloping attack on the enemy's left. Companies C and D he will hold in reserve.

Major A directs that each man be issued 120 extra cartridges from the ammunition wagons; after which all empty ammunition wagons will be sent back to the Missouri River bridge. A patrol of two mounted orderlies is sent to the south. The officers are then assembled and Major A, after giving them all the information he has of the enemy and the 1st Blue Division, issues verbally the following order:

> We will attack at once and I want the attack pushed home promptly.
>
> Lieutenant D with the machine gun platoon will move up under cover to 14 on the south side of the R. I. R. R. and, taking great care to prevent being seen, will move forward toward Beverly until he finds a good position where he will establish his guns, leaving his pack animals under cover of the woods. He will not open fire until the infantry advance draws the enemy's fire; he will then by his fire assist the advance. Later, under cover of the infantry fire, he will advance his guns from their first position, being governed solely by circumstances and his best judgment.
>
> Company A will send a sergeant and 2 squads to report to Lieutenant B as escort. The escort at first had better take position on the north side of the track, being careful to keep out of sight of the enemy. It will also act as left flank guard.
>
> Company A (less 4 squads) and Company B will constitute the firing line, Company B forming the right of the line and being the base company. Company A on the left will leave an interval of 50 yards between its left and the railroad. These two companies will

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deploy under cover of yonder woods (indicating the clump of woods southeast of 14) and then will advance to the ravine 200 yards in front. The advance to the ravine can probably be made without halting to fire but, on reaching that point, a heavy fire for a short time will undoubtedly be advantageous, as it will have an effect on the enemy and will probably enable Lieutenant D to advance his machine guns.

In advancing from the ravine Company A will move directly on Beverly; Company B will first direct itself on the farmhouse and stacks 700 yards south of Beverly and will then envelop the enemy's left.

Companies C and D will constitute the reserve and will occupy the eastern edge of the ravine as soon as Companies A and B have moved forward from there to the attack.

The senior medical officer will provide for caring for the wounded.

I will be with the reserve.

Solution, 3d Requirement:

Companies A and B deploy at about 1 yard interval and take up the advance.

Soon after leaving the cover of the woods they encounter the enemy's fire. Lieutenant D's machine guns at once reply to this fire and the firing line should be able to gain the ravine without halting. Companies A and B then open fire and, if practicable, Lieutenant D advances his machine guns.

Company B then takes up the advance, moving in the general direction of the farmhouse and stacks. Company A follows, moving straight to the front. At first the forward movement is made by company, halts being made to fire when the enemy's fire becomes fairly effective, the number of shots fired being limited to the number necessary to make an advance advisable. The advance by company, however, is made only for a very short time, if at all. To keep the

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enemy's fire down and render it less effective he must be subjected to a continuous fire. Hence, company commanders at first advance their right platoons under cover of the fire of the left platoons and then bring up the left platoons abreast of the right under cover of the fire of the latter. But even this soon becomes impracticable and a heavier fire is necessary to hold down the enemy's fire sufficiently to permit the advance of a fraction of the line. Company commanders then advance their right sections* under cover of the fire of the other three and then in turn bring the other sections forward to positions abreast of the first. In this manner the enemy is subjected to the fire of three-fourths of the line while one-fourth only is trying to advance.

The fire should be heavy enough to reduce materially the volume as well as to impair the efficiency of the enemy's fire and thereby to render it practicable for the firing line to advance.

If necessary company commanders reduce the fractions advancing at one time to a squad, thus subjecting the enemy to the fire of nearly eleven-twelfths of the company while the other twelfth is advancing. Whatever the size of the fraction advancing, the advance must be continuous, each fraction following the other promptly. The length of each advance is controlled by two factors: first, it must not be so long as to wind the men making it, thereby ruining their ability to resume promptly an effective fire, and, second, its length must be reduced in proportion to the effectiveness of the enemy's fire so as not to give him time to pick up the target and concentrate his fire upon it.

After the line is within effective infantry range the advance is made at a run. Advantage must be taken of any cover offered by the ground.

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*It will be recalled that by the Drill Regulations in force at the time this problem was written the company was divided into two platoons, each platoon into two sections.—*Ed.*

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It is to be borne in mind that, in advancing to the attack over an open plain against an enemy behind hasty cover, our chief reliance must be placed in the effectiveness of our fire to demoralize the enemy and destroy the effectiveness of his fire. Our fire must be superior to his and the size of the advancing fractions must be so regulated as not to offer the enemy too good a target and at the same time we must have enough rifles in action to interfere decidely with the opponent's aim and fire.

Major A moves his two reserve companies into the ravine as soon as the firing line has advanced therefrom. If he finds it advisable he improves the cover.

The number of rifles in the Blue firing line is more than double the number the enemy has engaged and the fire of the Blue infantry is further augmented by the fire of Lieutenant D's machine guns. Major A expects therefore the attack to be pushed home by the firing line alone. However, he closely observes the progress of the attack holding Company C in readiness to reinforce the firing line.

If the attack is seen to falter Major A at once throws in not less than a platoon of Company C and quite probably the entire company. If the line is to be reinforced it must be done by enough men at one time to produce an appreciable moral effect on his own troops as well as to increase the volume of fire. While on the one hand he would not reinforce the firing line unnecessarily, on the other he would not withhold needed reinforcements and thereby permit the attack to come to a standstill.

When the firing line reaches the farm road leading eastward from 12 the enemy's position is practically enveloped. The firing line, deployed along this road, has considerable cover and, with its great superiority in numbers, it should not take long for it to obtain an overwhelming fire superiority which would render easy the further advance.

As the advance is resumed from the sunken farm road (12) Major A will probably start Company C forward and

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expect its arrival to carry the line forward to the enemy's position—if the two companies on the firing line do not anticipate it by gaining the position unaided. The enemy undoubtedly will not await the collision.

Solution, 4th Requirement:

The position carried, the reserve, Company D, is at once moved up beyond the position to cover the reforming of the companies in the attack. An outpost is established and, covered by it, every effort is made to prepare a position for defence of the junction against an attack by a larger force of the enemy.

Ammunition is brought up and distributed. The wagons are sent for as soon as the position is carried and, after the necessary rations and supplies are unloaded, are sent back to Fort Leavenworth with the wounded.

A report of the situation is made to the division commander.

Comments:

In this case the enemy is definitely located and his strength is known to Major A. Red reinforcements may arrive before the close of the action while Blue reinforcements cannot arrive before the close of the day. These circumstances influence Major A in making his dispositions for attack and induce him to place in the firing line at the very start a large proportion of his men and to keep the remainder, in one body, near at hand as a reserve.

In many cases the position and strength of the enemy could not be determined so definitely before the attack. Frequently situations arise where information as to the exact position and real strength of the enemy's main force can be obtained only by attacking.

Had Major A's information of the enemy been indefinite he would have held a greater part of his force out of action until after the enemy's position had been developed and the

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proper direction of attack had been determined. To change the direction of troops already actually engaged is exceedingly difficult. Therefore, when doubt exists as to the enemy's position, and this doubt cannot be cleared up by patrols, the firing line at first should be made only strong enough to develop the enemy; then, and not until then, can the remainder of the force be given the proper objective and direction.

Could Major A have felt certain that the enemy would not be reinforced during the day his plan of attack might have been different. He might then have divided his command with perfect safety; for he could so divide it as to have each fraction still superior to the enemy. One point always to be borne in mind, when it comes to dividing a small force to such an extent that its chief can no longer control the whole, is that for such dispersion to be justifiable, the advantage to be gained by it must indeed be very great. The smaller the force the less justifiable is undue dispersion.

Had time permitted the enemy to have prepared carefully his position at Beverly with a strong, practically closed work with a loop-holed parapet and possibly with wire entanglements in front, Major A would not have been justified in attacking in the manner indicated.

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PROBLEM 2*

Attacking a Hill Position

FORT LEAVENWORTH FOUR-INCH MAP

Situation on September 1st, 1907:

A Red force in hostile territory is using the Missouri Pacific R. R. as a line of supply and is guarding it at various points. As a guard for the bridg over Salt Creek two companies of Red infantry have been posted on Salt Creek Hill with a detached post of 12 men at the bridge. These companies have constructed the ordinary standing trenches without obstacles.

A Blue force has been pushed forward from the w st to break the railroad at certain points. Part of this force. the 1st Battalion, 31st Blue Infantry, and a machine gun platoon under Major B, has been sent with orders to destroy the bridge over Salt Creek and as much of the track nearby as practicable and to rejoin th command at the rendezvous 6 miles west of 15 on the Millwood Road by 4 P. M. today. Major B, at the head of his command, has just arrived at Kern at 8 A. M. He has been informed that other detachments of the Blue force will attack all other guarded points along the railroad for a distance of 8 miles each way from the Salt Creek bridge.

Required:

1. Major B's estimate of the situation.
2. His order for the attack.

*Army School of the Line, 1907–8, Course in Tactics—Part I, Map Problem No. 6.

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Solution, 1st Requirement:

Major B's task is to destroy the railroad bridge over Salt Creek and injure the track in the vicinity. To accomplish thi he must first drive away the Red troops now intrenched on Salt Creek Hill, since their presence in that position will prevent the accomplishment of his mission.

It is now 8 A. M. To reconnoiter and get his command in position to attack will take an hour The attack, even if vigorously pushed, will take at least an hour. To march from the railroad back to the designated rendezvous will take about 3 hours. He will thus have at best but 3 hours, and probably less, in which to do his destructive work and let his men eat their dinner, since he must be back at the rendezvous in 8 hours.

The problem does not state what appliances he has for destroying the railroad but considering the nature of the expedition we may assume that he has whatever is necessary. The wrecking to any extent of such a road as the Missouri Pacific is slow work and does not correspond to the descriptions of the work of this kind done by General Sherman's army in Georgia where the rails were of iron and light in weight and the bridges were of wood. It is, therefore, Major B's duty to drive the enemy from his position as quickly as possible.

The strength of the enemy opposed to him he knows and, since the other forces of the enemy in the vicinity are to be engaged by other Blue detachments, Major B need fear no interference by them.

The enemy's trenches are located on Salt Creek Hill, which commands the bridge at a range of about 300 yards. At the foot of the hill, on the west, flows Salt Creek, thinly wooded and difficult to cross. On the east, about 300 yards away, is the Missouri River, the railroad being between the hill and the river. On the southeast, at a distance of 700 yards, lies North Hill of about the same height as Salt Creek

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Hill. An open ridge extends a considerable distance southeast from Salt Creek Hill.

The northern slopes of Salt Creek Hill are steep, the eastern quite steep, the southwestern fairly gentle. The farm road from the Millwood Road north to 13 is under fair cover from view and fire of the enemy.

To attack from the west would necessitate moving north along Salt Creek and recrossing that stream. The movement would be slow and the attack, over a difficult stream-crossing under short range fire and up either the fairly gentle southwestern slope or the steeper northwestern slope, would be hard to make. An attack from northwest or north would expose the attackers to fire from flank or rear from the enemy's detachment at the bridge; the attackers would also be likely to become exhausted and get out of hand. An attack from the west has the advantages, however, that steep ground nearly always affords many dead spaces which give shelter, and that the enemy are apt to overshoot.

An attack north along the western slope of the ridge might be combined with a secondary attack up the western nose of the hill. The objections to this are the longer time required for its execution, placing the attacking troops astride a difficult obstacle, and the fact that the enemy could see our dispositions from so far. Otherwise the ground is fairly favorable.

Another course is to move by the farm road by 13 to southeast of North Hill, there place the machine guns in position where they can fire on the enemy's position at a range of about 700 yards, and attack with the infantry as follows:

The primary attack to advance from Albrecht against the eastern face of the enemy's position.

The secondary attack to deploy near Schafer and advance against the southern face, its left extending across the ridge after the line has crossed the road.

The disadvantage of this plan lies in the ground the attacking troops must pass over. The primary attack has a

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steep ascent to make and the secondary some very open ground to cross. Its advantages are: a good position for the machine guns from which they can fire over the advancing infantry until it arrives within a short distance of the enemy's position; cover for the primary attack which will be sheltered by the trees up to short range; cover at several points for the secondary attack; the troops will be well in hand and the attack will probably take the least time.

Solution, 2d Requirement:

Major B sends out scouts to drive in any patrols or scouts of the enemy and moves his command to 13 where he assembles his company commanders and dictates his orders which, if written, would be in the following form:

1st Bn., 31st Inf.
13, Kansas.
1 Sept. 07, 8.30 A. M.

Field Orders
No. 1.

1. Two companies of the enemy's infantry are intrenched on SALT CREEK HILL with a detached post of 12 men at the bridge over SALT CREEK.

Other detachments of our army are to attack this morning all guarded points on the railroad for 8 miles each way from here.

2. We will attack the south and east faces of the enemy's position, drive him therefrom and destroy the bridge and railroad track.

3 **a**. Lieut. Y with the machine gun platoon will proceed to the vicinity of the northeast crest of NORTH HILL and establish his guns in position to bring an effective fire on the enemy's position. He will take advantage of cover and delay revealing his position until Company A deploys and begins its advance. He will then open fire and support the advance.

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b. Capt. E will take his company (A) to the vicinity of ALBRECHT, deploy and advance against the east face of the enemy's position.

c. Capt. F will take his company (B) to the vicinity of SCHAFER, deploy and advance against the south face of the enemy's position.

d. Lieut. X with 12 men of Company D will proceed to a point on the railroad about 900 yards southeast of the bridge and occupy the attention of the enemy's detachment at the bridge.

e. Companies C and D under my immediate command will constitute the reserve.

4. I will be at 13 at first and then follow the movement.

B,
Major.

Verbally to assembled officers.

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PROBLEM 3*

A Delaying Action

FORT LEAVENWORTH FOUR-INCH MAP

Situation:

On the 20th of September, 1908, Major A in command of a small but valuable convoy is retreating along the Millwood Road eastward into Missouri. His force consists of the 1st Battalion, 1st Infantry, and machine gun platoon. He is being pursued by a hostile force, now about 1 mile behind, which he estimates at two battalions of infantry.

As the head of his column reaches 17 Major A learns that the bridge over Salt Creek is impassable and that it will require an hour to repair it. Salt Creek from recent rains is unfordable.

Required:

Major A's estimate of the situation and orders.

Solution:

Major A's mission is to get his convoy safely into Missouri; to do this without fighting if he can; but to fight if he must.

On receiving word that the bridge on his direct road is damaged and will delay him one hour Major A realizes, knowing that the enemy is one mile or say 20 minutes march behind him, that he must find some other route, fight a delaying action, or lose his convoy.

The enemy has two battalions of infantry, Major A only one and a machine gun platoon. The enemy probably knows

*Army School of the Line, 1908–9, Course in Tactics—Part I, Map Problem No. 6.

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his exact strength since he has been following his trail. This is another unfortunate condition and Major A realizes that there is no use in making a false deployment to deceive the enemy as to his strength for the purpose of gaining time while the enemy cautiously seeks information on this point; the enemy already knowing his strength, would take prompt advantage of any opening offered.

From his map Major A sees that by turning south at 17 he might pass Salt Creek at Frenchman and in that way gain the Missouri River bridge. The Frenchman route is only about one mile farther than the road he is now on and the road itself seems to be equally good. Major A, however, appreciates at once the following disadvantages of taking this route:

The bridge at Frenchman may have been wrecked by the same parties who injured the one in his front. Should he turn down the 17—Frenchman road and find such to be the case his command will be in a pocket and ruined. The enemy, superior to him in strength, may have sent a force from farther west direct to that bridge, in which case Major A would lose his entire command if he marched by that road. Even if neither of the above conditions exists his change of direction would be promptly observed by the enemy and his march thereafter partake of the nature of a flank march. Although it will require an hour to repair the Millwood Road bridge sufficiently for loaded wagons to pass, it could much more speedily be rendered serviceable for the hostile infantry who would take advantage of this should he take the other road.

Major A observes that the terrain in his immediate vicinity offers advantages for fighting a delaying action and, much as he would like to avoid a fight, considers that the risks of attempting to march by the Frenchman route are too great to warrant his taking it.

He now considers the terrain with reference to a delaying action. With the leading element at 17 the rear of his main body would be about at the fence 200 yards west of 19

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and his rear point at the top of the hill opposite Breidenbrauch.

The position at Sprong he rejects as it would require a retrograde movement to occupy it, the enemy would have a good position from which to attack it and, unless Major A extended his line too long for proper resistance, it could be easily turned.

Midway between 17 and 19 there appears to be a good position; but to occupy it properly would require more men than he has. If he concentrated near the road his left flank could easily be turned, while, if he extended to hill 900 on the south and far enough north to look after his right flank, his extension would be too great. He considers this preferable to the Sprong position; but he will not accept it if he can find a better one not too close to the bridge.

A position at 17 seems to fulfill the requirements better. It is far enough from the bridge to prevent the enemy's bringing the bridge under fire while Major A holds his ground. It can be held without undue extension and is favorable to his withdrawal. The disadvantages of the position are that the field of fire is not as extensive as is to be desired and that hill 900, southwest of 17, will afford the enemy cover for a close approach. Major A considers 17 a good position for the machine guns. From there they can sweep the country to the west and northwest and bring an effective fire on a large part of hill 900. A detachment placed at the southwest point of hill 880 (southeast of 17) would cover with fire the face of hill 900 and would prevent an enveloping movement on his left. Another small detachment on the point about 500 yards northeast will provide protection for his right. His reserve must be so placed as to support promptly either flank detachment or his firing line.

Major A believes that the enemy will attack promptly in front and try to envelop his left and that he may detach troops to march through Frenchman. To meet this latter contingency a patrol should be sent there to injure the bridge

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or bridges and delay the crossing there. The patrol can rejoin later at the Missouri River bridge.

The withdrawal is part of the problem for Major A to consider and he believes that if he can hold his ground until the convoy is safely across the stream he can withdraw with small loss. The first troops withdrawn, with which would probably go the machine gun platoon, would hasten to the vicinity of 15 which they could reach in about 12 minutes. A part of the reserve should be in position at this time on hill 875. Shortly after the first detachment started for 15 the remaining troops of the firing line could be withdrawn and, as soon as they reached the cover of the slope, could take the run across the stream. The detachment on hill 875, opening suddenly a heavy fire, would check temporarily the pursuing enemy and would in its turn withdraw as soon as those leading were far enough ahead not to block the bridge for it.

The ground is peculiarly favorable for the carrying out of this plan provided the enemy does not get too close before the withdrawal begins. As soon as the covering detachment on 875 starts to withdraw it will be covered from fire until the enemy reaches the crest of the hill overlooking Salt Creek and at that point the enemy will come under the fire of the leading troops posted near 15.

Major A does not include instructions for withdrawing in his order; but he considers them in making his plan. He assumes that the special troops with the wagons are sufficient to repair the bridge. Were they not a small detachment would be made from the leading company.

The companies in order of march are A, B, C, D, the last being the rear guard. While coming to a decision Major A has allowed the column to advance until the main body has reached 17.

His decision is to take up a defensive position at 17; to place his machine guns at the cross roads; to deploy Company B north of the Millwood Road with 1 squad on the spur to

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the northeast; to deploy Company C south of the road with 2 squads on the southwestern spur of 880; to hold Companies A and D as reserve near the road, under cover about 400 yards east of 17; to send at once 1 squad of Company A to Frenchman as explained above; to hold the wagons under cover east of J. E. Daniels, with orders to cross Salt Creek as soon as possible and move as rapidly as they can until safe from fire.

Major A, having previously sent a squad of Company A to Frenchman, assembles his company officers (except those of Company D), Lieutenant X of the machine gun platoon and his staff and gives them the following orders:

> The enemy's force, about two battalions of infantry, is pursuing us. His leading element is about 1 mile in rear of our rear guard.
>
> The bridge over Salt Creek in our front has been damaged and to repair it will take about an hour.
>
> We will take up a position here to hold the enemy in check until the bridge can be repaired.
>
> Lieutentant X, put your machine guns in position at this crossroads in whichever angle you can get the best field of fire and open on the enemy at the first opportunity.
>
> Captain B, deploy your company (B) north of Millwood Road with your left about 25 yards from it and just east of 17—H road. Send 1 squad to that spur 300 yards to the northeast (pointing) as right flank detachment.
>
> Captain C, deploy your company (C) with your right about 25 yards south of Millwood Road and just east of 17—H road, sending 2 squads to that spur 300 yards to the southeast (pointing), giving them instructions to look out for the enemy near 900 hill and to protect our left flank.

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Both flank detachments are to report promptly any movement of the enemy in their direction, to hold him in check until reinforced and to fire on any good target offered.

Companies A and D will constitute the reserve and will take post under cover near the Millwood Road about 350 yards east of here.

120 rounds of extra ammunition will be issued at once and the ammunition wagons will then join the others.

Lieutenant Y (Battalion Quartermaster), go at once and have all wagons placed under cover east of J. E. Daniels. Send me word as soon as bridge is repaired and hurry the wagons across.

I will be near 17 for the present.

Lieutentant G (Battalion Adjutant) is sent to communicate this order to the Captain of Company D.

Note: It is assumed that the trees along the 17—H road are such as not to interfere with the fire of troops. Were this row of trees a thick hedge the firing line would be placed west of the road and ample openings provided for its withdrawal.

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PROBLEM 4*

Attacking a Ridge Position

FORT LEAVENWORTH TWO-INCH MAP

Situation:

The Missouri River is the boundary between Kansas, Blue, and Missouri, Red. War, for which neither side is well prepared, has just been declared.

A Blue brigade has recently been concentrated at Leavenworth with detachments at the eastern ends of the Terminal Bridge and the Rock Island Bridge. So far as known to the Blue commander there is no considerable Red force in the vicinity. On October 8 at 8 A. M. information is received that 2 or 3 companies of Red infantry have just arrived at Baldwin, that similar Red forces have reached the bridge west of Platte City and the bridge east of Farley and that the bridge over the Platte River, east of 60, has been destroyed.

The commander of the Blue force at once orders Major A to proceed with his battalion (1st Battalion, 1st Infantry) and an attached machine gun platoon and drive the enemy from Baldwin and secure the bridge nearby. Major A is informed that suitable forces are being sent against the other hostile detachments west of the Platte River and that time is important to prevent hostile reinforcements arriving and the enemy's gaining secure possession of the line of the Platte.

At 9 A. M. Major A reaches 14 and learns that the enemy a few minutes before began intrenching just west of Baldwin.

Platte River is unfordable.

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*Army School of the Line, 1909–10, Course in Tactics—Part I, Map Problem No. 6. The "Baldwin problem."

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Required:

Major A's estimate of the situation and orders.

Solution:

It is assumed that Major A's force is marching with Company A as advance guard, the main body in order of march being B, C, D, machine gun platoon, ammunition wagons.

Upon reaching 14 and receiving the information, as stated in the problem, Major A directs Captain B to take command of the main body and to continue the march to the Alexander house east of 12 and himself gallops forward to the advance guard.

At 12 he directs Captain A, if he has not already done so, to send a patrol north of the ravine between the 10—52 and the 12—50 roads and another to the south to move towards 950 hill, both patrols to remain out as combat patrols in case of a fight. The point of the advance guard is directed to gain cover behind the nose northeast of F. H. Hanley, the remainder of the advance guard to halt behind 960 hill. These positions are to be gained if practicable without exposing the men to view; but hostile patrols if met are to be driven away.

Major A then, from the hill at Alexander, carefully reconnoitres the position and decides on his plan of action.

Major A's estimate of the situation:

His mission is to drive the enemy away from Baldwin and to secure the bridge nearby. The second part of his mission requires that he sucessfully accomplish the first part.

As the enemy is in friendly territory it may be assumed that he has, from inhabitants and his own patrols, rather accurate information of Major A's command and, as he has begun intrenching, he evidently intends to make a stand. Hence Major A must attack.

At Blue headquarters nothing is known of any large body of hostile troops in the vicinity; yet three hostile

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detachments have been pushed across the Platte, covering three of the four bridges, and the fourth bridge has been destroyed. Major A interprets this to mean that the enemy is hurrying troops forward to seize and hold the crossings of the Platte; that he has hurried his first troops to arrive across to hold the bridges; that he did not have enough to hold all of them and so destroyed one; that he would not have so acted had he not expected the early arrival of supporting troops with, however, the possibility of some delay.

This is a strong reason for prompt action by Major A. Another reason for losing no time is that the enemy has only just begun to intrench and that the more time he has to work the more difficult it will be to defeat him, while if Major A moves promptly the enemy's partially constructed trenches will not afford him much protection.

Major A has been informed by his brigade commander that troops are being sent against Farley and Platte City so that he has to consider only what is in front of him. He accepts as correct the information that the enemy has only 2 or 3 companies of infantry. Major A has a battalion and machine gun platoon which gives him a sufficient preponderance to warrant an attack if made before the enemy can prepare strong defensive works.

The terrain Major A considers favorable to him. From 12 to the enemy's position is a watershed sloping generally to north and south into deep ravines. The high ground between is cut by depressions north and south which afford considerable cover to troops moving eastward against Baldwin. The enemy's position is near the eastern end of the ridge. From near Baldwin the ground slopes quite abruptly to the north and east, less so to the south and southwest where the slope terminates in a ravine. Southwest of Baldwin, across the ravine mentioned, is a hill (900) which affords a fine fire position for the attack, but which would not be so good to advance from.

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North of F. H. Hanley is a ravine, extending north and a little over 1000 yards from the enemy's position, which affords cover and in which an attack could be formed. The line advancing from this ravine would find considerable cover. Troops could reach the ravine with little exposure to view or fire.

Major A now considers the plans of attack open to him.

He could reach hill 900, southwest of 50, with probably little loss; but the enemy would then face him squarely from the Baldwin ridge 700 yards away and his advance across the ravine would be costly.

He might deploy in the ravine north of F. H. Hanley, the right of the line 100 or 200 yards north of the road, and move directly on the enemy's position. This plan is the simplest. In this way he can get within about 800 yards of the enemy with little loss and have fairly good ground for the remainder of the attack. The enemy however would in this case have the attacking force united squarely in his front and Major A's advantage would be small.

He next considers deploying 2 companies in the ravine, as in the previous plan, and, when they are in position to open fire east of the ravine, having the advance guard company, followed by the machine gun platoon, move round the south end of hill 960 to hill 900 southwest of 50. As soon as Company A and the machine guns were in position they would open a heavy fire and the attacking line would then take up its advance. The advantages of this course are: the more enveloping fire; the close range (700 yards) of the troops stationary on the hill; the oblique fire of these troops which can be continued until the assault is nearly home; and the fact that, as they are not moving, their fire will be more effective, which will greatly assist and encourage the attacking line.

He rejects unhesitatingly any plan involving a wide separation of his force.

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He examines the country with a view to a turning movement, to the north by 52 or to the south by Peterson, and rejects both. Either point would take a considerable time to reach and, when there, he would still have as far to advance as he has from his present position and over less favorable ground. Major A feels sure that the enemy's patrols would know of such a movement and, while he might thereby render the enemy's present intrenchments useless, the enemy would probably be about as well prepared on a new line. A further disadvantage is that a turning movement would uncover Major A's line of retreat, a fatal error should the enemy be heavily reinforced before or during the movement.

The plan of moving to Cecil and along the ravine to the east is open to the same objections as the preceding, though in a lesser degree; also the line of advance to attack is not so good as that farther south.

Major A therefore decides to attack at once, deploying Companies B and C in the ravine north of F. H. Hanley with the right of the line about 150 yards north of the road and to advance with them directly against the enemy's position; as soon as they are ready to advance, to have Company A, followed by the machine gun platoon, move by F. H. Hanley on hill 900, southwest of 50, and support the attack with a heavy fire from position; to hold Company D as reserve, at first in rear of hill 960; to order 120 rounds of ammunition per man issued.

Major A assembles his officers and issues the following verbal orders:

To the Battalion Quartermaster:

Have the extra ammunition distributed to the troops at once.

As soon as the wagons are emptied send them back to Leavenworth to be refilled.

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To assembled officers:

The enemy, consisting of 2 or 3 companies of infantry, has only a few minutes ago begun intrenching just west of Baldwin hill (pointing it out). So far as known there are no large bodies of the enemy in the vicinity; but small detachments are near Farley and Platte City. The brigade commander has sent other troops to attack these detachments and drive them across the Platte.

We will attack the enemy in our front, drive him away and secure the bridge to our east.

Captain B, with Companies B and C, move to the northeast into that swale just east of here thence into that ravine (pointing it out). Deploy your companies at one man per yard,* right of line about 150 yards north of this road. As soon as your line is formed move forward until you can open fire on the enemy and begin the attack. Your objective will be the enemy's trenches.

Captain A, as soon as Captain B completes his deployment, move with your company (A) by that house (Hanley) and seize that hill (southwest of 50). The machine gun platoon will follow you and be under your command. Form with left of your line near this road. Open as heavy a fire of position on the enemy as practicable and support and assist the attacking line.

Lieutenant Y, with your platoon follow Company A; you will be under Captain A's command.

Captain D, move your company behind this next hill (960); you will remain there in reserve until further orders.

I will be for the present with the reserve.

---

*It will be recalled that by the former Drill Regulations the men were deployed at two yards intervals.—*Ed.*

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PROBLEM 5*

On The Offensive

GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

A small Red detachment, in hostile territory, has gathered a large quantity of supplies at Gettysburg and is to ship them by the Western Maryland Railroad to the Red army as soon as a broken bridge over Rock Creek can be repaired.

A Blue force under Major A consisting of the 1st Battalion, 3d Infantry, and a machine gun platoon, is ordered to proceed from Littlestown by the Baltimore Turnpike and prevent the shipment.

At 7 A. M. on October 1st, as the point of the advance guard reaches Plum Creek, a reliable citizen of Germantown informs Major A that three or four hundred hostile infantry are on the hill near Fairview and that a man just come from Gettysburg reports that there are over one hundred Red soldiers in Gettysburg, that they have impressed citizens to help load cars and that the bridge over Rock Creek will probably be completed by 11 o'clock or by noon at latest.

At the same time a hostile patrol near Germantown fires into the advance guard and then promptly falls back. The enemy is located near Fairview and south.

Required:

Major A's estimate of the situation and orders.

Solution:

Major A's mission is to reach Gettysburg in time to prevent the shipment of the supplies in question. From the

*Army School of the Line, 1910–11, Course in Tactics—Part I, Map Problem No. 5.

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information he has received he concludes that they will probably be on cars before the broken bridge is completed and will leave immediately thereafter. Major A should reach Gettysburg by 11 A. M. As his road is blocked by a hostile force, he must either defeat or evade this force.

It is about seven miles to Gettysburg by the direct road, or a little more than two hours' march, even for a small force of infantry on a good road. This leaves Major A less than two hours' margin in time and still less if he marches by any other road.

The reports of the enemy's strength lead him to believe it to be a battalion of infantry with three companies in his immediate front and one company at Gettysburg. Major A has a battalion and machine gun platoon against three companies if he decides to force his way to Gettysburg by the direct road. Altogether the enemy is about equal to him in strength but the enemy is divided while Major A's force is united. As Major A is operating in friendly country the inhabitants can be counted on for information and such help as they can give and also to withhold the same from the enemy. The fact that they are opposed to an invader should add to the zeal of Major A's troops.

The enemy's plan in sending the three companies to near Two Taverns is evidently to delay a force sent against Gettysburg until the cars can be forwarded. The country and roads are favorable for fighting a delaying action. Towards Gettysburg the terrain along the turnpike is rolling and affords much cover to a small command falling back in that direction pursued by a hostile force. About 1200 yards this side of Fairview a ridge crosses the road, affording cover for a deployment for a direct attack. Beyond this ridge the turnpike runs in a little depression commanded—as is the bridge over Littles Run— by the hostile position. A direct advance is impracticable until the enemy is driven off. There are numerous roads by which the position could be turned both

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to the north and to the south but they are much longer than the direct road and time is important.

Major A first considers the practicability of turning the hostile position. This he can do by either the north or the south. But the enemy has gained contact with him and will undoubtedly watch his movements so that it is very improbable that he can, unobserved, avoid the enemy by a detour. To make such a detour Major A must turn off beyond rifle range of the enemy's present position. He considers first an attempt to the south.

Major A might turn south at 547, cross Plum Creek at D. Spangler and march to the Taneytown Road and on that north. The distance by that road is nearly four miles greater and to reach Gettysburg, even if unopposed, would take until very nearly 11 A. M. . The enemy moreover would be left on an interior line and could readily interpose between Major A and Gettysburg. Should Major A make this attempt he sees that he would in all probability have to defeat the enemy before he could gain his objective, and defeat him in as strong a position as that in which he now is, and have nearly two hours less time in which to do it. He rejects that plan.

He next considers turning north. That route is better than the other; it is a little shorter and leads directly to his objective. Major A believes, however, that if he turns north, east of Plum Creek, the enemy by a shorter road will intercept his march somewhere on the Hanover Road probably near Mt. Vernon S. H., a better position than the one the enemy now occupies. That plan appears impracticable.

Major A now considers an immediate attack.

The enemy's right flank is covered by the wooded stream running parallel to the turnpike. An attack on that flank must cross the stream and advance up the slope. The ground seems more favorable for an attack from either the southeast or the east. Major A can form for attack undisturbed east of the ridge which crosses the turnpike about 1200 yards from the enemy's position. An advance made from there, north

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of the road, in a northwesterly direction, would be over slightly rolling ground which would probably afford some little cover.

To make a wide turning movement to the north to direct the attack between Littles Run and the road north through Fairview possesses some advantages. Such a movement would have a fairly good line of approach and the attack, if successful, would drive the enemy off his line of retreat. The principal disadvantage is the additional time it would take and, the enemy, with so small a force as a single infantry battalion, would find being pushed off his road in such country as this no great matter.

To attack with his main force in a direction nearly parallel to the turnpike, sending a left flank detachment with the machine gun platoon to the orchard at W. Yoost or near there and only a small patrol to the right flank, has many advantages. It is the simplest and quickest plan, offers good chances of gaining the necessary fire superiority and, if successful, will give as good results as the preceding. A section* sent to the left flank, by turning off east of the ridge, crossing the road and going through the woods, can gain the cornfield which extends nearly to W. Yoost; the section can be followed by the machine gun platoon.

As the main attack opens and begins its advance the enemy's line will probably be found to be near Fairview and parallel to the road. Thus as Major A's line advances and the fight develops, the machine guns will open a fire on the enemy's line which will be nearly enfilading and almost determine the question of fire superiority and with it the victory.

The disadvantage of this plan is the apparent wide separation of the parts of the command. But this rule hardly applies. Flank patrols *must* be sent out anyhow and this is a patrol strengthened by the machine guns. The

*¼ of a company under the old Drill Regulations—*Ed.*

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sending of two companies to attack from W. Yoost while the other two attacked in front would be an error.

Major A therefore decides to deploy behind the ridge and attack at once; to advance directly against the enemy, two companies in the firing line and two in support; to send one section and the machine gun platoon to near W. Yoost as left flank protection and to assist by fire in the attack; to send a patrol of a non-commissioned officer and four men well to the right.

After making a personal reconnaissance and learning from that, and from the reports of his patrols, that the situation is as above set forth and after having directed the issue of the extra ammunition Major A assembles his company, and machine gun platoon commanders and staff and issues the following verbal orders:

> The enemy has gathered a quantity of supplies at Gettysburg and has been loading them on cars with the probable intention of shipping them to his army. This cannot be done until the bridge over Rock Creek is repaired. These repairs will be completed about 11 A. M. today.
>
> We are ordered to prevent the shipment.
>
> The enemy has about one company of infantry in Gettysburg and about three companies in position on the high ground north of the turnpike about 1200 yards to our front.
>
> We will attack these three companies at once.
>
> Lieutenant D, with the 1st Section of Company C and your machine gun platoon, move through that woods (pointing) and the cornfield beyond to a position in the W. Yoost orchard or, if that point cannot be reached, then near there in the corn. As soon as the main attack is well developed open fire on the enemy and assist the attack.

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Companies A and B will form the firing line under Captain A. These companies will deploy at once at one pace interval just behind the ridge in our front, Company A on the left with its left about 400 yards north of the turnpike. I will give the order to advance.

Companies C and D will form the support. As soon as the advance begins they will follow Company A as far as the ridge and there await my orders.

Captain C (Company C) send a good sergeant and four men as right flank patrol to the woods you see to our northwest and to the north of there.

The wagons will remain where they are.

I will be at first with the support.

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PROBLEM 6*

On the Defensive

GETTYSBURG GENERAL MAP
GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

A Red detachment in hostile country has gathered a large quantity of supplies at Gettysburg and is to ship them by the Philadelphia and Reading Railroad to the Red army near Harrisburg.

At 3 A. M. on October 1st there are cars enough to move the stores but no locomotives and, owing to a break in the road, they cannot arive until about noon. Colonel X, the Red commander at Gettysburg, learns at this hour that there is a small Blue command at Littlestown and that a battalion of Blue infantry with machine gun platoon will march from there about 6 A. M. to prevent the Red shipment of supplies from Gettysburg.

Colonel X has with him but four companies. He decides to use one of these companies to guard the supplies and impress laborers to load the cars. At 3.15 A. M. he gives Major B the following order:

> It is reported that a hostile battalion with machine gun platoon will advance from Littlestown, starting about 6 this morning, to prevent the shipment of these stores. The locomotives to move our trains will not reach here until noon.

---

*Army Service Schools, problem given to the Special Class for Field Officers in 1911. This problem deals roughly speaking with the other side of that discussed in the preceding. The two situations are, however, not exact counterparts.—*Ed.*

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> Take your battalion, less Company D, move out on the Baltimore Turnpike to a good position and delay the advance of the enemy until the stores are shipped.

Required:

Major B's estimate of the situation and plan of action.

Solution:

Major B's mission is given in his order, to delay the enemy until the stores are shipped. He may assume that this will be done shortly after 12 noon.

From Littlestown to Gettysburg is about 11 miles. The road is good and the weather at this season is generally good for marching. The command is a small one. The enemy, if not delayed, could make it in about four hours and if he started at 6 could reach Gettysburg at about 10 A. M. Major B must delay him therefore at least two and one-half hours.

Major B's force is three companies of infantry. The enemy, if correctly reported, has four companies of infantry and a machine gun platoon—a superiority of one company and a machine gun platoon.

Major B is in hostile territory; the enemy in friendly. This will doubtless prove of considerable advantage to the enemy; for the inhabitants will be eager to give him all information of the Reds but will withhold all information from Major B.

However, Major B has one advantage: he does not necessarily have to win a battle; he needs only to cause delay. The enemy not only must push Major B out of his road but must do it promptly. With the enemy it is not merely a question of driving Major B but of driving him quickly and this may lead him to take a less easy way to victory.

The enemy will probably advance by the best and most direct route, the Baltimore Turnpike. Major B believes

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that the enemy will be well informed as to conditions in Gettysburg and will appreciate that he has only a small margin of time. When he encounters Major B's command he will probably act promptly and vigorously to drive it out of the way. There is a possibility however that he will endeavor to avoid Major B by making a detour and Major B must provide against this.

The Baltimore Turnpike runs in a general southeasterly direction from Gettysburg. West of the town lies the Wolf Hill ridge, steep in places and heavily wooded. There are no roads crossing it between the Baltimore Turnpike and the Hanover Road. The Baltimore Turnpike crosses this ridge at McAllister Hill; crosses Rock Creek a short distance beyond and, a mile beyond that, crosses White Run. Although both of these streams are fordable each affords something of an obstacle if the crossing be defended. Several other streams or ravines cross the road at right angles and the intervening ridges lend themselves admirably to a delaying action, affording cover from the pursuer as soon as the positions are quitted.

There are many cross roads connecting the Baltimore Turnpike and Hanover Road. From Littlestown by Whitehall and the Hanover Road to Gettysburg is about two miles farther than by the Turnpike and the road is not so good. If the enemy takes that, or other cross roads farther west, nearly an hour of the necessary delay will thereby be gained. The enemy may also turn west near Two Taverns to the Taneytown Road and thence north. The distance by that route is a little over a mile farther and the road is not so good.

Major B must take up a position where he can block for the time required the enemy's advance by any route he may take.

There are serious objections to a position right at the town. The combat would decidedly interfere with the loading and, if the enemy were that close, hostile patrols might

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easily work round a flank and, with high explosives, interrupt the road. Combats between such small commands are sometimes quickly decided and, after a combat at the town, there would be no second position where delay might be caused. Besides Major B is ordered to move out on the Baltimore Turnpike.

Major B might move on Littlestown until the enemy was encountered, thus gaining all the distance practicable in which to fight a delaying action. The principal objection to that course is that it would result in a meeting engagement in which the advantage would be too much on the side of the stronger force.

A position on the hill near Two Taverns is considered. Its advantages are that it can be occupied before the enemy can reach it; that it covers the roads to Gettysburg open to the enemy; that it covers the best road south of the turnpike and enables any hostile movement in that direction to be met; and that the succession of ridges in the rear would greatly assist Major B in withdrawing and in further delaying the enemy. Its principal disadvantages are its distance from Gettysburg and from the Hanover Road. Major B could, however, send patrols to the northeast with signal flags and thus learn of any movement by the enemy toward the Hanover Road in time to meet it.

The next position considered is one behind White Run and across the Baltimore Turnpike at the S. Horn place. Its advantages are that it has White Run as an obstacle in its front, that it affords a fairly good field of fire for long range infantry work (except for the orchard between St. Mary's Church and White Run) and that the withdrawal from it could be easily effected. In this position Major B could cause the enemy considerable delay. The position would be hard to reconnoiter and to reconnoiter it would take time. The deployment and advance would be slow. The bridge over White Run would have to be destroyed.

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Behind the S. Horn position is another, near McAllister Hill, with Rock Creek in its front. The position has a more restricted view; withdrawal from it would not be so easy; it is nearer Gettysburg than is desirable; and it would be difficult to meet from it a hostile advance by the Hanover Road. Nevertheless it does afford a good second position after quitting the one at S. Horn.

Major B therefore decides to advance to the S. Horn place and, upon arriving there, to send a patrol with a signal flag to hill 484 to observe south and east; to send an officer's patrol with a signalman to hill 567, about a mile north, to watch the Hanover Road and roads leading to it; and to push a patrol well out on the turnpike.

If the enemy advances by the turnpike he will place one section near hill 486, to reach the ravine emptying into White Run north of the turnpike and to flank the steep bank of the stream near there, and place a combat patrol on his left, northeast of the woods. Two companies will be deployed in the firing line which will extend across the road approximately along the 500 contour. One company, less the patrols, will form the reserve.

Should the enemy advance by the Hanover Road, the patrol should see him as he reaches the vicinity of St. Luke's Church. Major B in that case will move north and take up a position on the ridge across the Hanover Road near the word "Road" on the map. The patrol on 567 will be left there; another will be sent to 606 about 900 yards to the north. As before, two companies will be placed in the firing line and one in support.

Should the enemy turn off near Germantown or Two Taverns to move by the Taneytown Road, Major B will move to near hill 592 on that road and meet him there. It is not a good position; but the enemy's route would be longer and the necessary time could be gained by fighting a delaying action at several points along the road. Instead of taking up a

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position to make a determined stand Major B would, in such event, make a succession of smaller fights, forcing the enemy to keep deployed and to advance very slowly. If sufficient time had not been gained by the time hill 606 were reached he would there make a determined stand and fight for whatever time might be needed. Upon first reaching hill 592, if the enemy were not too close, Major B would send one company further south to the first crossroads to force an earlier deployment.

Major B, being familiar with the country and having the map, soon forms his plan. It is hardly an hour's march to his proposed position. He accordingly orders reveille at 4.30, the troops to be in readiness to march at 5.30.

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PROBLEM 7*

At the River Crossing

GETTYSBURG GENERAL MAP
NEW OXFORD THREE-INCH SHEET

Situation:

Conewago Creek, because of high water, is unfordable. All bridges over the stream in the loop between Newchester and Waldheim are intact; all others for a distance of 15 miles in each direction have been either washed away or destroyed.

The 1st Battalion, 1st Blue Infantry, in friendly territory, near Husbach at 8 A. M. on September 21st, receives the following message:

1st Infantry,
Littlestown,
21 Sept. 11, 6 A. M.

To Major A:

It is reported by a reliable person that a hostile raiding party consisting of a brigade of infantry is gathering supplies about 10 miles north of you, that orders were issued last night for two battalions of that brigade to move against you at 7 A. M. this morning and to destroy the bridges over the CONEWAGO near you.

This command, with my regiment as advance guard, will move north today to clear our territory of the enemy but cannot start before 10 A. M.

X,
Colonel.

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*Army School of the Line, 1911–12, Course in Tactics—Part I, Map Problem No. 4.

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Required:

1. Major A's estimate of the situation.
2. Preliminary arrangements and preparations, if any.

Continuation of the situation:

At 10.15 A. M. the enemy is reported at Oakwood S. H. and just starting to advance in two columns, one on the road leading southwest, the other through the woods directly south.

Required:

3. Major A's order.

Solution, 1st Requirement:

From the information received Major A knows that there is a hostile force to the north and that the main Blue force starts from Littlestown at 10 A. M. to drive it out. Owing to the swollen condition of the Conewago this force must cross on one of the two bridges near Husbach or make a wide detour which would result in much delay and would allow friendly country to be still more overrun by hostile troops.

Simply to protect the bridges from destruction from the south side of the stream would not answer the purpose; for the enemy, by holding the northern exit, would make the forcing of a crossing a very costly operation and one consuming much time. Major A's mission is therefore to hold open a safe crossing of the Conewago for the main Blue force.

To accomplish this mission Major A has at hand one battalion of infantry. His main body is at Littlestown, about 14 miles away by road, and will not start to his support until 10 A. M. The remainder of his regiment, being in the advance guard and understanding the situation, may be relied on to push the march. Nevertheless Major A cannot count on its arrival before 3 P. M. and it will probably be later.

Reliable information places the enemy's strength at one brigade of infantry 10 miles north of Husback, of which force

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two battalions started at 7 A. M. to move against Major A and may consequently be expected to arrive at any time after 10 A. M. To carry out his mission successfully he must hold off twice his strength for about five hours. In a combat between forces of this size it means a decision.

Major A has the advantage of being in friendly territory, of better information, more familiarity with the country, and the moral effect of this on his men. He has two hours in which to select and strengthen a position which the enemy must capture in order to win. Major A needs only to hold on. The enemy however can select his line of operation and to a great extent has the lead.

The enemy will undoubtedly advance through Oakwood S. H. at least with the bulk of his force for he would hardly commit his main force to 519—463 road through the woods. The enemy can be counted on to act aggressively and attack vigorously as soon as he has located Major A's force. If, however, Major A were to withdraw to the far side of the stream the enemy would probably intrench to cover the northern side and to prevent a return; he would not be likely to attempt to force one of the bridges though he would try to destroy them.

The two bridges in question are located on opposite sides of a bend in the Conewago. This bend is a little over a mile across at the mouth and a little deeper than it is wide. A ridge running nearly north and south terminates in the loop; its slopes both to the east and to the west are gentle and offer no serious impediment to the movement of troops. There are extensive woods about Oakwood S. H. and north of and reaching to the bridge at 463. These woods are free from underbrush but would interfere with view and fire and would be a detriment to a weaker force on the defensive. The ravine east of and nearly parallel to 510—526 road might prove a slight obstacle but is more likely to afford the attacker a position in which to reform his lines for a further advance. The little knoll 526 is slightly the highest ground in the loop

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and has a fair field of fire except for a narrow strip of open woods towards the northeast and the orchard and buildings of the Husbach farm. The ravine can be enfiladed at short range from the opposite bank of the Conewago. There are no points in the loop affording any but a comparatively short range of fire and view in the desired directions.

Major A has several courses open to him. He can withdraw across the stream and either retreat to meet the main force or take up a position to prevent the destruction of the bridges. In either of these cases he abandons his mission.

He can move north to meet the enemy. He could in this way gain a position with a better field of fire than is to be found in the loop and might be able to fight in successive positions. He would, however, give up his opportunity to prepare and strengthen his position and he is so inferior in strength that a position in advance of the loop might readily be turned and, if he were crowded to the east or west, he not only would uncover the bridges and open the way for a detachment to destroy them but would find his command cut off. He has little faith in his success in attempting a running fight against double his strength with so short a distance in which to fall back and the necessity of holding out for five hours at least. He would be almost certain to become too closely engaged to break off successfully.

If he fights in the loop he must first decide whether to attempt to save both bridges intact or only one. The bridges are over a mile apart and he has but one battalion against two. He cannot hold any such line. To divide his force half at each bridge would be worse; for the enemy could then mask the first with a company while the other seven attacked the second bridge. When that was taken the enemy's whole force could turn against the first. The Blue force requires but one bridge to cross and Major A believes it better to concentrate his efforts to save that one than to risk accomplishing nothing by attempting too much.

He decides therefore to try to save but one bridge.

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He considers first the one at 463. The woods extend close up to that bridge and wherever he may take up his position at the start he realizes that it must end in a fight in the woods with a very restricted field of fire, poor control, and the advantage entirely with the stronger force.

At the lower bridge at 434 he finds that if he takes up a line from the edge of the woods south of the draw west of 526 to the steep bank at the north end of the knoll he obtains a field of fire good to the west and northwest for 500 yards or more but not good to the north and northeast. Major A does not like that ravine north of the position. However, by placing a detached work to his right and rear and by thinning out the woods (if necessary) to the ravine and constructing obstacles therein he can improve the situation. Opposite the mouth of the ravine he can construct a small work which will command it and enfilade a hostile line attempting to move southwest against the main position. Such a work and the detachment occupying it will serve another valuable purpose: in case Major A should be defeated and driven across the stream he would require troops in position on the other side to assist his withdrawal. The work must be located with care and so defiladed as to prevent its defenders being silenced by fire from the northern side.

Major A decides to disable the bridge at 463 and to prepare a position about knoll 526 in which to defend the other bridge to the last extremity. He will supplement the main work with a detached work opposite the mouth of the ravine and another in the edge of the woods east of his right flank. The left of the main trench will be so placed as to sweep the draw to the left and to flank the front of the main position. Abatis and wire entanglements will be constructed so far as time permits and the field of fire cleared as much as possible. An effort will be made to get all the civilian help within reach to assist in this labor.

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Solution, 2d Requirement:

The telephone is used to summon all the civilian help possible.

Two mounted patrols are formed, one being sent toward Hampton, the other by the road through 519, with instructions to use the telephones. If there are no mounted couts available for these patrols, men would be mounted on the horses of the orderlies, hospital corps men and even of the mounted officers.

It is assumed that there is already a squad at Oakwood S. H. as outpost.

A detachment of an officer and one section is sent to 463 to disable the bridge.

An officer with one section is sent to construct the work opposite the mouth of the ravine and ordered to remain and occupy it.

Another section is designated to construct the work east of the right flank.

The remainder of the command is put to work on the main line.

As the civilians arrive they are assigned their work.

The work is so laid out that it can be completed and the men assembled by 10 o'clock that they may be secured a little rest before the fight opens. As soon as the trenches are practically finished all the extra ammunition will be distributed therein and the empty wagons sent back to park off the road near Seven Hundred S. H.

The messenger from Colonel X is sent back to meet him on the road with a report of Major A's plans; this is necessary to insure his marching on the right bridge.

At 8.15 Major A assembles all his officers and issues the following verbal orders:

> A hostile brigade is located about 10 miles north of here and has detached two battalions to destroy the bridges in this vicinity; they were to start at 7 A. M.

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Our main force with the remainder of this regiment as advance guard will start from Littlestown at 10 A. M. for the purpose of expelling the enemy from our territory.

This battalion will intrench and must hold a position covering the bridge at 434 for the crossing of our troops.

Lieutenant X proceed at once with one section of Company D to the bridge at 463 and disable it so that it cannot be repaired by the enemy for several hours. If necessary to accomplish this you may totally destroy it by fire. Rejoin as soon as this work is accomplished.

Lieutenant Y, proceed with one section of Company D to a point on the nose opposite the mouth of that ravine (pointing). Select a position from which you can best enfilade the ravine and bring an effective fire to bear on the ground to the south of it. Strongly intrench, looking out especially for protection against fire from the north. Determine accurately your ranges.

Captain D, have one section of your company strongly intrench about 150 yards east of the right of the main line. As soon as the trenches are completed and ranges determined have the men construct obstacles and clear the field of fire so far as practicable. You may use all the remaining available men of your company.

Captain A, with your company (A) intrench a line along the military crest of this knoll from this road (526—510) northeast to the steep bank there (pointing).

Captain B, with your company (B) prolong the line from this road southwest to the edge of the woods.

Captain C, prolong the line west and southwest to a short distance south of the head of that draw.

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In addition to the entrenchments, Companies A, B and C will construct obstacles in their front and clear their field of fire. Ranges will be determined and marked.

The field train will be sent to Seven Hundred S. H. and parked off the road.

Work will be completed by 10 A.M. and troops assembled east of 526, the extra ammunition issued, and the combat train sent to join the field train.

3d Requirement:

At 10.15 Major A issues the following verbal order:

The enemy is approaching from Oakwood S. H. in two columns one on the road running southwest, the other south through the woods.

We will occupy this position.

Company A the trench they have constructed, from this road northeast.

Company B, from the road southwest into the woods to where the line bends to the southwest.

Captain D, with one platoon of his company, the remainder of the line, sending a patrol to the farmhouse near the river west of his position.

One section of Company D, Lieutenant Y, will continue to occupy the work constructed by it across the Conewago.

The other section, Lieutenant X, the work east of our right flank.

Company C will be the support and take position in the draw near the road about 200 yards east.

The dressing station will be in the farmhouse near the road about 400 yards east of here.

I will be near the bend of the road between the line and the support.

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PROBLEM 8*

On the Frontier

GETTYSBURG GENERAL MAP

HUNTERSTOWN AND NEW OXFORD THREE-INCH SHEETS

General Situation:

The Conewago forms part of the boundary between two states, Red to the north Blue to the south.

The Red government declared war on July 1st.

Frederick is known to have a Blue garrison of a brigade of infantry, a battalion of field artillery and a squadron of cavalry.

Dillsburg has a Red garrison of about the same strength

Special Situation—Blue:

At 11 P. M. on July 1st General B, commanding at Frederick, received a telegram from Blue army headquarters informing him that it was reliably reported that a hostile regiment was advancing on Gettysburg by the Harrisburg Road and that it would probably be followed by other troops.

General B was directed to move his command to the frontier and prevent the enemy from crossing; to use the W. M. R. R. so far as practicable. He was also informed that Gettysburg was considered of great importance and must not be allowed to fall into the enemy's hands.

The artillery and cavalry were ready and starting to march on Gettysburg at 3 A. M. The first train left an hour later carrying the 1st Battalion, 1st Infantry, machine gun platoon and eight mounted scouts. The remainder of the infantry was to follow by trains at short intervals.

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*Army Service Schools, Special Class for Field Officers, 1912, Map Problem No. 4—1st Series.

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At 6 A.M. Major A with the 1st Battalion, machine gun platoon and eight scouts, was detrained at Gettysburg and ready to march. His orders from General B were to move out on the Harrisburg Road to the frontier and hold the enemy; that the remainder of the force would be sent to support him as fast as it arrived; and that two battalions would be not more than two hours behind him.

At 7.50 A.M., as Major A at the head of the main body is at crossroads 549, he receives positive information by telephone from near Plainview that a hostile regiment of infantry is crossing the Conewago and that the leading troops are across.

Required:

Major A's estimate of the situation and orders.

Solution:

Major A's mission was to move to the Conewago and prevent the enemy's crossing. He now find the enemy across. He must carry out the spirit of his original order. The enemy must not get farther into Blue territory than can be helped; especially must he be kept from reaching Gettysburg.

The odds against Major A are heavy—three to one. The enemy has a regiment; he a battalion. But he will be supported in less than two hours by two more battalions; and other troops are behind those. So far as known the enemy has no support near at hand.

Major A is in friendly country, which will be to his advantage in gaining information, and the fact that they are resisting invasion should have some effect on his men.

Major A fully appreciates the disadvantage of a defeat in the first encounter and knows that this should always be be avoided; but he believes that he can hold out until supported and that, when the other two battalions of his regiment arrive, especially if unexpected by the enemy, the Blues should win a decided victory.

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The enemy will undoubtedly attack, and do so promptly, unless Major A hurriedly withdraws.

Major A has several courses open to him.

He can promptly retreat. Advantages—he will save his battalion heavy loss, and if the remaining two battalions arrive on time the fight can then take place near Gettysburg on even terms. Disadvantages—a retreat, when vigorously pursued, soon becomes a rout, and is apt to lead to demoralization. Should the supporting troops be somewhat delayed, as might easily be the case with such a railroad as the W. M., Gettysburg would be lost and might be difficult to retake. The moral effect of such a retreat in the first encounter would be nearly as bad as a defeat. By fighting here, even if defeated, he may be able to delay the enemy long enough to make Gettysburg safe under any probable circumstances.

He can fight a defensive or delaying action. For this to be justifiable there must be of course a suitable position available.

A position at hill 566 gives good command to the front and both flanks and a field of fire of about 1000 yards in three directions. The little stream on the left with its thin fringe of trees will have little effect except that it would be favorable to the enemy in forming his assaulting line should he attack that flank. To the front the field of fire is excellent. Should Major A be forced to retire the terrain affords considerable cover for the early part of the retreat.

Major A decides to take up a defensive position across the Harrisburg road near hill 566 with two companies in the firing line, two in support; to put the machine guns on hill 574; to send a right flank detachment of two squads to to cross roads 517 and a left flank detachment of one squad to hill 607; to send a mounted patrol of three scouts to work well out on each flank, to keep the other two as orderlies; to issue all the extra ammunition and to send the empty ammunition wagons back to Gettysburg to refill.

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Major A directs the battalion quartermaster to issue promptly all the extra ammunition and to send back the wagons and then assembles at hill 566 his company commanders, machine gun platoon commander and staff (except the quartermaster) and issues the following verbal order:

> A hostile force of about a regiment is reported to be advancing against us, its leading element has just crossed the Conewago.
>
> We shall be supported within two hours by two more battalions and later by the rest of our brigade.
>
> This battalion will take up a defensive position here and hold the enemy until support arrives.
>
> Lieutenant Y, place your machine guns on the northeast spur of that knoll to our right (pointing to 574) near farm road and fire on the enemy when you get a good target at 1500 yards or less.
>
> The adjutant will send a patrol of three scouts well out to our right front and another to our left. I want prompt information of any movement toward either flank.
>
> Company A will deploy near this point, its left about 50 yards to right of road, on a front of about 200 yards, sending two squads under a sergeant to cross roads 517 to observe and protect our right.
>
> Company B will deploy with its right on this road on a front of about 200 yards, sending one squad to hill 607 (pointing) to cover our left.
>
> Companies C and D will constitute the support and for the present will take station near the first road fork in rear of our center.
>
> The wounded will be collected south of the support.

Major A then directs the adjutant to telephone his dispositions to the commanding officer at Gettysburg if there is a line; if not, to send them by orderly.

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PROBLEM 9*

Crossing the Frontier

GETTYSBURG GENERAL MAP
HUNTERSTOWN THREE-INCH SHEET

General Situation:

The Conewago forms part of the boundary between two states, Red to the north, Blue to the south.

The Red government declared war on July 1st.

Frederick is known to have a Blue garrison of a brigade of infantry, a battalion of field artillery and a squadron of cavalry.

Dillsburg has a Red garrison of about the same strength.

Special Situation—Red:

Late on June 30th the 1st Red Infantry, Colonel B commanding, was advanced to York Springs.

At 6 P. M. on July 1st Colonel B received the following message from his brigade commander, dated Dillsburg, 1 July 12, 5 P.M.:

> Advance to Gettysburg and hold the town. The remainder of this garrison starts at 4 A. M, to support you.

Colonel B was delayed in getting started. He reached the Conewago at 6 A. M. and halted to rest and cook breakfast. Immediately after breakfast his mounted scouts were pushed on ahead.

At 8.15 as Colonel B, at the head of his advance guard reserve, reached Plainview he received a message from the

*Army Service Schools, Special Class for Field Officers, 1912, Map Problem No. 5—1st Series.

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front that a Blue battalion of infantry was going into position near hill 566 but that the road in their rear was reported clear of troops.

Required:

Colonel B's estimate of the situation and order.

Solution:

Colonel B's mission is stated in his order, to "advance to Gettysburg and hold the town." At 8.15 A. M. he learns that a hostile battalion of infantry is blocking his road. His immediate mission becomes the driving away of this force, otherwise his principal mission must be given up.

Colonel B has a full regiment, the enemy only one battalion. The scouts report that there are no other hostile troops close behind that battalion so he can conclude that it is not merely the advance guard of a larger force. Whether or not it will be supported later he can only guess. The odds are sufficiently great in his favor and the chances of his being reinforced seem as good if not better than those of the enemy. He is fully justified in proceeding to Gettysburg.

The enemy is in friendly country which gives him some advantage and is on the defensive which at the start neutralizes part of Colonel B's superiority.

The terrain is not favorable to Colonel B. In the enemy's front the attackers will have to advance about 1000 yards over very open country which the enemy commands. On the enemy's right the ground slopes downward toward a small wooded stream about 1000 yards from the position. The slope there is steeper than in front and would probably afford more cover. The trees in the creek bottom would afford some cover for the formation of an attacking line and for the support but to reach that cover unseen from the enemy's position would be difficult and require a long detour. The enemy will doubtless have that part of the terrain observed and will in any case learn of the movement. The nose running parallel to the 535—517 road and the open

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forest thereon afford cover for the deployment and for the supports.

On the enemy's left there is hill 607. It can be reached under cover by making a considerable detour. From there to the enemy's position is about 1000 yards. The advance would be down a rather steep slope to the creek bottom, then up for a short distance on the other side. As the stream is small and the woods are thin the creek would be only a slight obstacle but it affords cover behind which the attacking line can be gotten into shape for the final advance, which is a great advantage. Hill 607 is an excellent place from which to deliver fire of position as it commands the enemy's line and is sufficiently high to enable troops posted on it to fire over their own advancing line. The enemy will doubtless have his left observed so that it would be merely wasting time to make a long detour to escape observation.

Starting from 616 a force to envelop the enemy's right will have 3000 yards to march to the place of deployment; from the same point, to envelop the enemy's left by 666—hill 712—581, 6000 yards.

Colonel B has several courses open to him.

He can await reinforcements or further orders. Not considered.

He can try to march round the enemy. It would effect no good result as the enemy would have interior lines and would keep between him and Gettysburg. He would still have to defeat the battalion to accomplish his mission, his men would have to march much farther than the enemy and would be more tired and if the enemy has any supporting troops on the way the delay would play into his hands.

He can attack squarely in front. It is the simplest and quickest course. The objections to it are that it would be much more difficult to gain fire superiority and that the losses would be much heavier. The deployment could be made more quickly but it is doubtful if the enemy would be driven out much sooner.

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He can attack in front and envelop the enemy's right, have part of his regiment turn southeast at 616 and deploy behind the nose while another part attacks down the Harrisburg Road.

The alternative is to have the enveloping force move to the western slope of hill 607 and attack from there. In either case one battalion will attack along the main road.

Either attack will enable him to gain fire superiority and probably to win. To envelop the enemy's right will take from 30 to 40 minutes less time than the other while to envelop his left gives the Reds the advantage of better terrain and an excellent opportunity to use fire of position to help forward the firing line. The enemy is reported as *going* into position. He has probably done as yet little or no intrenching. A delay of 40 minutes would undoubtedly be utilized by the enemy to get cover for his firing line. Such a gain to the enemy, Colonel B believes, would more than neutralize the advantages for the attack offered by the western flank over the eastern.

Colonel B now seeks a position for his machine guns. The crossroads at 561 is first considered. The slope is not good for firing over his own frontal attack and he hardly wants a sufficient gap in his line for the machine guns to fire through at this point. The range moreover is too long to suit him.

Another position considered is the nose 1000 yards southwest of 561. If Colonel B envelops the enemy's right the enemy will put most of his support on that flank. In that case the machine guns would not be able from this position to give the attack the support desired as the range is too great.

He next considers the edge of the woods near the farm buildings southeast of 535 or the farm yard itself. From there both the frontal and the enveloping attack can be supported, the range is not excessive and cover can proabaly be found.

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Colonel B decides to attack at once, enveloping the enemy's right. To place the machine guns near the farm on the 535—517 road. On account of the importance of hill 607, to order a platoon there as right flank guard.

While Colonel B is making his personal reconnaissance and forming his plan of action, his battalion commanders, machine gun platoon commander and staff have been assembled by his orders at 561. The advance party of the advance guard has halted there and, with the mounted scouts, formed the march outpost. The remainder of the regiment is closing in mass at 616.

Colonel B then issues the following order:

A hostile battalion of infantry is taking up a position near that knoll (pointing).

We will attack at once enveloping the enemy's right.

The 1st Battalion will deploy across this road and advance when the 2d Battalion has deployed. One platoon will be sent to hill 607 (pointing) to drive off any hostile covering detachments which may be there and to cover our right.

The 2d Battalion will turn to the southeast at the road fork about 1000 yards north of here and move behind that nose (pointing) and deploy with right about 200 yards to the left of that farm and advance to the attack.

The 3d Battalion will constitute the reserve under my orders and will for the present take station behind this clump of trees.

The machine gun platoon will follow the 2d Battalion to the roadfork east of that road, thence advance to that farmhouse and select a good position from which to support the attack.

The adjutant will send a patrol of five mounted scouts well to our right front with instructions to get

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round so as to observe the enemy's rear. A similar patrol to our left front.

The principal dressing station and collecting point for the slightly wounded will be just north of this point.

The trains will halt at Plainview.

I will be here.

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PROBLEM 10—Troop Leading*

Covering a Retreat

GETTYSBURG GENERAL MAP AND BONEAUVILLE THREE-INCH SHEET

Situation:

The 1st Blue Infantry, less 1st Battalion, in friendly country, was severely defeated about two miles east of Sells Station on the morning of July 1st and is retreating in disorder on Littlestown.

The 1st Battalion and a machine gun platoon were not engaged in the fight and are now near Lefevre.

As the colonel commanding, following his two defeated battalions, reaches Lefevre he earns that the enemy, one regiment of Red Infantry, pursuing in two columns, has reached Sells Station with the leading troops of his right column, which is marching along the railroad, and the crossroads southeast of Sells Station with the leading troops of his left column, which is marching by the Center S. H.—Lefevre road.

The colonel of the Blue regiment determines to check the enemy in order to gain time to reorganize his defeated battalions and to load his wounded on cars now at Littlestown for removal to Frederick. He has about 75 wounded just west of Lefevre and others between there and Littlestown.

Required:

1. The colonel's action and any orders he may give.
2. The action and orders of Major A, commanding the 1st Battalion.
3. The orders of Captain B, commanding the right

*Army School of the Line, 1910–11, Course in Troop Leading, Map Problem No. 1.

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company in the firing line, from his receipt of Major A's order until the opening of fire.

4. The leading of and orders to any flanking detachments from the 1st Battalion.

Solution, 1st Requirement:

The Colonel's order to Major A:

Major A, the enemy, one regiment of infantry, is advancing in two columns, one by the railroad, the other by the wagon road, and is now about a mile and a half from here. I am going to load my wounded on the cars at Littlestown and reorganize the two battalions that were defeated.

With your battalion and the machine gun platoon under your command take up a position near here to check the enemy and gain me the necessary time.

I will notify you when the work is accomplished. I will be at Littlestown.

To the Regimental Adjutant:

Hurry to Littlestown and notify the battalion commanders that the 1st Battalion will check the enemy here to enable them to reform their battalions.

Direct them to stop the retreat and reform their battalions. You assist in this work. Order the band to report to the surgeon.*

To the Surgeon:

The 1st Battalion will check the enemy at this point. Load all the wounded that will bear the trip on the cars now at Littlestown and as soon as your ambulances are emptied send them back here to remove as many as possible of the wounded in the action to be fought here.

The emptied ammunition wagons and any others available will be at your disposal.

*The instructions as to the band will probably have been given before this.

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Place a Red Cross flag on the train; it will not start until the rear guard reaches Littlestown.

See that no uninjured armed man is on the train.

The band is placed under your orders.

To the Quartermaster:

Direct all your loaded wagons to continue the march for ten miles toward Frederick. Take the emptied ammunition wagons and other empty wagons in your train and assist in removing the wounded to the cars. Have the railroad train ready to start but hold it until the rear guard reaches Littlestown, then start it for Frederick. Have the railroad interrupted behind your train so you cannot be followed by rail.

The colonel then proceeds to Littlestown and supervises the reforming of his disordered battalions and the loading of his wounded. Very severe measures may be resorted to, if necessary, to check the retreat and get the men back in ranks and under control.

The moment this is done and the wounded are loaded orders will be sent to Major A to withdraw and follow as rear guard.

Not a moment should be lost, for if Major A delays his withdrawal too long and becomes closely engaged it will possibly be necessary to call back one of the other battalions to break the enemy's hold.

2d Requirement:

On receipt of the colonel's orders Major A orders the extra ammunition issued and assembles his captains, machine gun platoon commander and staff and issues the following verbal order:

The enemy pursuing our troops is now about 1½ miles east of here advancing in two columns, one on the railroad, the other on this wagon road.

This battalion will take up a position here and

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cover the loading of our wounded and reforming of the other battalions.

Lieutenant K, you will place your guns in the western angle of the two roads near the north and south road there (pointing) at crossroads 612. Open fire on enemy's columns as soon as they are within effective range.

Company A will deploy on the right of the machine guns, left of company at the railroad track.

Company B will deploy on the left of the machine guns, right of company on wagon road.

Company C will deploy one platoon on the left of Company B and send one section under 1st Lieutenant X to near that hill (pointing to 636) to protect our left flank and one section under 2d Lieutenant Y to the south side of that orchard (pointing) to protect our right flank.

Fire will be opened as soon as a target is observed.

Company D will constitute the reserve and take station under cover near the bend in the road about 500 yards west of here.

The wounded as far as possible will be collected at the reserve.

The position will be held until I order the withdrawal.

If Major A is notified to withdraw before the enemy really begins the attack, the companies in order will be assembled and take up the march in rear guard formation, Company D last, furnishing the rear party.

If the enemy gets at all closely engaged, the firing line will have to be ordered back in line of skirmishers, the reserve company deploying on hill 647 to assist its withdrawal and following as last company. The companies will then be assembled in proper columns as soon as practicable, Company D last.

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3d Requirement:

Captain A moves his company so as to have his left in position and before deploying states:

> This battalion is taking up position to check the enemy advancing along the railroad and wagon road, long enough to allow our wounded to be loaded on cars and the other battalions to be reformed.
>
> This company is the right of the line. There is a detachment farther to the right to cover our flank. The company must hold its position until ordered to fall back. The wounded will be assembled at the reserve at the bend in the road 500 yards west of here.

He then deploys his company on its left squad at one yard interval* and sees that the men are advanced or withdrawn the necessary short distances to get good positions, ability to fire on the enemy being the first consideration and, after that, cover.

Ranges to different points are then carefully determined according to means at hand; if there are none, then estimates are made by the best men at this work.

Careful observation is kept up and, as soon as the enemy is seen at a practicable range, fire is opened by order of the captain.

4th Requirement:

Lieutenant X, having received his orders, marches his section through the cornfield in the direction of the knoll marked on the map 636 and halts on the ridge just short of the northern edge of the corn, explains the situation to his men and then orders:

> L, you and M go to the northern point of the ridge, observe to the north and northeast and signal me as soon as you see the enemy.

*By the former Drill Regulations.—*Ed.*

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N, move a little farther out than the detachment, where you can see to the east and southeast, and watch carefully for the enemy.

If the enemy attempts a turning movement in his direction he will put up as stubborn a defense as possible, sending information promptly to Major A.

2d Lieutenant Y marches his section to the orchard. On arriving there he explains the situation to his men and then orders:

Corporal G, take one man and go to the roof of the farm house and keep a careful lookout for the enemy and for signals from Corporal H's party.

Corporal H, take two men and proceed to the northeast corner of that wood (pointing to the woods about one-half mile to the southeast) observe carefully to the east and north for the approach of the enemy. Signal me any information you gain. If this line should fall back without orders being sent to you, with your men move south and then across the Frederick road and join the command.

Lieutenant Y then carefully estimates the ranges to points on the enemy's probable line of approach and prepares to open fire when a favorable opportunity offers.

His section is held in the meantime under cover behind the farm house, in the orchard or in the cut in the road as he finds best.

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PROBLEM 11—Troop Leading*

In a Brigade Attack

GETTYSBURG GENERAL MAP

NEW OXFORD, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

PART I.

Situation:

An Eastern field army, in hostile territory, is advancing on Gettysburg. Brigadier General A, commanding the 1st Brigade, 1st Division, of this army, to which is attached the 1st Squadron, 4th Cavalry, 1st Battalion, 2d Field Artillery, and 1st Ambulance Company, has been detached on a separate mission.

General A at 9 A. M., returning to rejoin, is halted at the Kilpatrick S. H. (southwest of Brush Run), troops closed up and covered by his cavalry.

At this time General A receives the following messages:

1st Squadron, 4th Cavalry,
1½ miles north of Boneauville,
1 Sept. 10, 8-50 A. M.

To Brigadier General A:

Encountered enemy near here, drove in his cavalry and found force of all arms going into position across the Kilpatrick S. H.—Boneauville road on ridge 613 about one mile north of Boneauville.

Estimate hostile force at about 2000 infantry, two batteries and not more than a troop of cavalry.

D,
Maj., 4th Cav.

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*Army School of the Line, 1910–11, Course in Troop Leading, Map Problems Nos. 3 to 5.

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1st Eastern Field Army,
Near Two Taverns,
1 Sept. 10, 8-15 A. M.

To Brigadier General A:

This army will probably be attacked this morning; our line extends from near Two Taverns to the southwest.

The general commanding directs that you move promptly and come in on enemy's left.

X,
Chief of Staff.

Heavy artillery fire has been heard from the direction of the south since 8.30 A. M.

The commanders of infantry regiments, cavalry squadrons, artillery battalions and staff being assembled, General A, at 9.10 A. M., issues the following verbal order, which if written would be as follows:

1st Brigade, 1st Division,
Kilpatrick S. H.,
1 Sept. 10, 9-10 A. M.

Field Orders
No.—

1. Our army is engaged with the enemy, right of our line near TWO TAVERNS. This brigade is ordered to strike the enemy's left flank.

A hostile detachment of about half our strength has taken position on ridge about 2½ miles south of here.

2. We will attack this hostile detachment, enveloping its right, and open our road to the enemy's left.

3 **a.** The 1st Infantry will advance along the road leading south and attack the enemy in front. This advance will begin at once and will later support the enveloping attack.

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b. The 2d Infantry and the 3d Infantry, in the order named, with the artillery on the left, will move under cover of this ridge along BRUSH RUN to opposite BRUSH RUN S. H.

The artillery will then go into position to the west of that point and open fire on the enemy.

The 2d Infantry will deploy with right about 500 yards to the left of the artillery and move to the attack.

The colonel of the 2d Infantry will provide the necessary protection for the march.

c. The 3d Infantry will constitute the reserve and will take station in rear of the right of the 2d Infantry.

d. The 1st Squadron, 4th Cavalry, will cover our left, sending strong patrols to the right, and will gain contact with the right of our main army.

4. The field train will remain where it now is.

The 1st Ambulance Company will follow the 3d Infantry as far as CEDAR RIDGE.

5. I will be at the head of the left column until it deploys, then near the reserve.

A,
Brigadier General.

Verbally to assembled officers. Copy by an aide to Chief of Staff.

Required:

1. Orders and dispositions of Colonel E, 1st Infantry.
2. Orders and dispositions of Colonel F, 2d Infantry.
3. Orders and dispositions of Colonel G, 3d Infantry.

Solution, 1st Requirement:

Colonel E, 1st Infantry, on receipt of his order from General A, proceeds to join his command, advances to the ravine a short distance south of Kilpatrick S. H. and halts. He directs his adjutant to notify the battalion commanders

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to order the issue of extra ammunition while the command is waiting and to join him at the front.

Colonel E then proceeds forward to 573, accompanied by his staff and battalion and machine gun company commanders, studies the ground, and issues the following verbal order:

> A hostile detachment of about half the strength of our force has taken a position on that ridge across the road less than two miles from here to the south.
>
> Our army is now engaged with the enemy on a line extending from Two Taverns to the southwest. This brigade is to attack the enemy in our immediate front and clear the road for our advance.
>
> The artillery and 2d Infantry will attack, enveloping the enemy's right; the 3d Infantry will be the reserve; the cavalry will cover our left, sending strong patrols to the right. This regiment will attack along this road against the enemy's front. The movement will be made as promptly as practicable, but the attack will not be pushed much beyond the second cross road (581—560) until that of the 2d Infantry is under way.
>
> The machine gun company will follow the 1st Battalion as far as the draw in which it is to deploy thence up this draw to the roadfork 594 and thence to that clump of timber. The company will get cover near the southwest corner of the woods. Unless a particularly good target is offered fire will not be opened until the attack is well developed. Our artillery will be in position nearby.
>
> The 1st Battalion will leave the road near this point keeping to the east of it and move under cover to the draw about 300 yards north of roadfork 581. The battalion will there deploy on a front of about 300 yards, right near the stream west of the road, and at once advance. Your objective will be hill 627. Be-

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yond where the stream crosses the road your right will rest on the road.

The 2d Battalion will leave the road here and advance under cover to the nose between the two branches of the stream, thence to southern edge of next woods. It will there deploy and advance, left near stream and. beyond where the stream crosses road, near the road. Hill 613 will be your objective.

The 3d Battalion will constitute the reserve and follow the right of the 2d Battalion. One company of this battalion will be ordered by the major to protect the right flank of the attack.

To Lieutenant P, commanding the scouts:

Have a patrol of six of your men move out well to the west of the 2d Battalion; a patrol of eight men maintain connection between our left and the right of the 2d Infantry; two men follow the 2d Battalion; the rest remain with me.

The emptied ammunition wagons will be sent back to join the train. The band will report to the senior medical officer, who will establish a regimental dressing station in the grove west of roadfork 550.

After the advance is under way I will be at the farm house 150 yards northwest of roadfork 560.

After issuing his order Colonel E sends one of his staff officers to communicate the same to General A and to inform the commanders of the artillery and 2d Infantry where he has placed his machine guns.

2d Requirement:

Colonel F, 2d Infantry, on receipt of his orders from General A, issues the following order to the assembled officers of his regiment:

The enemy has a detachment of about half the strength of our force in position across the road, about

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two miles south of here. Our army is engaged with the enemy near Two Taverns.

This brigade will attack at once enveloping the enemy's right.

The 1st Infantry will attack along this road against his front; this regiment will move south behind this ridge (pointing) and attack his right, the artillery will be on our right, the 3d Infantry in reserve near us. The cavalry will cover our left flank.

Captain A (Company A), take your company and move out at once around this nose and move south keeping between Brush Run and the ridge.

Lieutenant Z, take command of all the mounted scouts and, taking the same route prescribed for Company A, trot out to Cedar Ridge and from there south as far as the F. X. Noel farm. Put men in observation at suitable points on the ridge to protect our march from surprise.

After Company A gains a distance of about 600 yards Colonel F moves out.

Having reached the 606—614 road, his leading company and the cavalry having driven off a strong hostile flanking group from near F. X. Noel, the attack of the 1st Infantry being under way, he assembles his staff, battalion commanders and commander of the machine gun company, on the ridge and gives them the following order:

Nothing new has developed. The machine gun company, 1st Infantry, is on the ridge near our right (pointing).

Major X, Ist Battalion, deploy your battalion behind this ridge on a front of about 250 yards, right near that fence to our south, and advance against the northeastern face of hill 627.

Major Y, 2d Battalion, deploy your battalion with your right about 200 yards from the left of Major X and attack the eastern face of the same hill.

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Major Z with the 3d Battalion will constitute the regimental reserve, and will follow the left of the 2d Battalion and send patrols to our left.

The machine gun company, after the attacking line has crossed the ridge, will proceed to the F. X. Noel house and support the attack. They will not open fire until the attack is fully developed, unless an exceptionally good target is offered.

Company A will be subject to the orders of its battalion commander as soon as the deployment is made.

The adjutant will have the band report to the senior medical officer.

Regimental dressing station at orchard north of Gulder place.

The emptied ammunition wagons will be parked near the crossing of Brush Run on the 606—614 road.

I will be near the reserve.

3d Requirement:

Colonel G, 3d Infantry, after the artillery has moved west past the head of his column, advances to the 606—614 road and halts his column of companies astride the road, assembles his battalion commanders and staff and gives the following order:

A force of the enemy about half our strength is in position astride the road we were on, right of his line about half a mile from that ridge to our right.

Our army is engaged with the enemy near Two Taverns. This force is attacking the hostile detachment in our immediate front: the 1st Infantry down the road, the 2d Infantry and artillery from this side. We are in reserve and will remain here until further orders.

Extra ammunition will not be issued.

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PART II.

Required:

1. Orders and dispositions of the battalion commanders of the 1st Infantry.

2. Dispositions and action of the troops of the 1st Infantry charged with protecting the right flank.

Solution, 1st Requirement:

The major, 1st Battalion, on receipt of notice from the adjutant, directs his quartermaster to issue at once the extra ammunition and then joins the colonel.

After receiving his order from the colonel, he rejoins his battalion, assembles his officers and gives the following order:

> Lieutenant Z, send the empty ammunition wagons back to join the train.
>
> Our army is engaged with the enemy near Two Taverns. A detachment of the enemy, about half the strength of our detachment, has taken a position across the road about two miles south of here.
>
> We will attack at once; this regiment along this road, the 2d and the artillery on our left front, 3d in reserve. This battalion on the left of this road, the 2d Battalion on the right, the 3d Battalion in reserve.
>
> Captain D, have one squad of your company under a lieutenant move out at once as scouts parallel with this road. They will halt soon after crossing the second east and west road. Have another patrol of four men well out to our left.

As soon as the scouts are well started the major puts his battalion in march in column of squads. At 573 he turns to the east, skirts the woods, thence moves into the draw and

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through the next woods and into the next draw. Here he halts the battalion and gives the following order:

> About 200 yards in our front there is a jog to the west in the north and south road which, about 200 yards farther south, crosses a small stream. Company A will deploy at one man to the yard with its right on this road beyond the jog and move to the attack of the enemy's position directly to his front.
>
> Company B will deploy in the same manner, its right connecting with the left of Company A.
>
> The attack will not be pushed far beyond the point where you meet the stream until I give the order.
>
> Companies C and D will be in support and follow in rear of the center of the line.

As soon as the 2d Infantry attack is well started he orders an advance unless it has before that been ordered by the colonel.

The Major of the 2d Battalion orders the ammunition distributed and then joins the colonel at the front.

After receiving his order from the colonel, he returns to the battalion, orders his empty ammunition wagons to join the train, assembles his officers and issues the following order:

> Our army is engaged with the enemy near Two Taverns. A detachment of the enemy, about half the strength of ours, has taken up a position across this road about two miles south of here.
>
> Our brigade is to attack at once; our regiment along this road; the artillery and 2d Infantry against the enemy's right; the 3d Infantry in reserve.
>
> The 1st Battalion of this regiment will attack on the left of this road, this battalion on the right of the road; the 3d Battalion will be in reserve in our rear and protect our right flank.

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> Lieutenant O, take two squads of Company A, move rapidly southwest across that little stream to the end of the ridge or nose, thence south along the same about a mile to the east and west road and cover the advance and deployment of the battalion. Move out at once.

As soon as the scouts have a start of 600 yards the battalion is marched in column of squads across the stream. The Major, on arriving at this point, gives the command to form his battalion in line of companies in column of squads and continues his advance to the next woods. Before emerging from the woods he gives this order:

> E and F Companies will constitute the firing line and will deploy at one pace interval, E on the left, left of line near that little stream until it crosses the north and south road, then on the road. The objective will be that hill (pointing to 613) now occupied by the enemy.
>
> Companies G and H will be the support. Form for attack. March.

As soon as deployed, the major orders the line forward and advances until at or near 560—572 road where he opens fire unless he has been compelled to do so earlier. As soon as the 2d Infantry and the 1st Battalion advance he pushes his own line forward.

The major of the 3d Battalion directs his quartermaster to issue the extra ammunition, then joins the colonel. After receiving his order from the colonel he rejoins his battalion; orders the quartermaster to send the empty wagons back to join the train; assembles his officers and says:

> Our army is engaged with the enemy near Two Taverns. A hostile detachment about half the strength of our detachment has taken up a position across this road about two miles to the south of here.

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Our detachment will attack at once and open the road to our army.

Our regiment is the right of the attacking line and this battalion is to be the regimental reserve and to cover the right of our line. Our cavalry has strong patrols to our right.

The battalion then takes up the march and follows the 2d Battalion across the stream. At this point the major gives the following order to the commander of Company I:

Captain, take your company and move south up this stream to our right with flanking groups to the right of your main body. Take advantage of the cover of the woods to get as close as practicable to the enemy's left. You are charged with the protection of our right flank. I will follow with the rest of the battalion.

Company I having advanced about 400 yards the major forms his remaining companies in line of companies in column of squads, one company west of the stream on his right and two east of it. He then follows in this position relative to the remainder of the line until required to reinforce the line or to change his formation to avoid heavy loss.

2d Requirement:

On receipt of his order the Captain of Company I gives the following explanation and orders to his company:

Our main army is engaged in battle near Two Taverns about five miles from here. A detachment of the enemy about half the strength of our detachment is in position on the ridge about 1½ miles from here.

We are going to attack at once and clear the road to our army. Our regiment is the right of the line, our battalion the regimental reserve. This company

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is charged with covering the right flank of our line. Our cavalry has strong patrols to our right. Our battalion will follow this company.

Sergeant D, take the 1st squad and move west under cover to those woods about half a mile west of here and reconnoiter the same and remain there in observation. Keep in signal communication with Corporal E.

Corporal E, take two men and move southwest along the next branch of this stream to our west, have one man watch the edge of the woods for signals from Sergeant D.

Lieutenant F, with the next squad as scouts move up this stream to the south edge of the second woods. I will follow you with the remainder of the company.

The captain leads his company, at first in column of squads, toward the woods referred to above. If he draws fire he will have to change his formation. If the woods are found occupied by a small force of the enemy, merely a flanking group, he will drive it out and occupy the southern edge with the 1st Platoon (less patrols) deployed, the 2d Platoon as support, and will endeavor to push the patrols into the next woods south. If the woods are more strongly held he will try to ascertain by about what strength and report to his battalion commander who will assist in driving the enemy out if he is not too strong.

When the main firing line assaults, Company I also advances on the position.

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PART III.

Required:

1. All dispositions and orders of the squadron commander.

2. All dispositions and orders of the commanders of detachments sent out by the squadron commander.

Solution, 1st Requirement:

On receiving his orders Major D gallops back to his squadron, which is assembled in the draw 300 yards north of 581, hidden from the enemy by the rising ground in its front and by the standing corn. The men are standing to horse, each troop in column of fours. A platoon of Troop A, under a lieutenant, is between 560 and 581, sheltered by the corn and observing to the front. The men are dismounted, their horses being a short distance in rear. A patrol of a sergeant and 8 men, which originally advanced by way of Cedar Ridge, is halted in the edge of the woods south of 614 and remains there in observation. The squadron quartermaster is somewhere in front of them with 3 men, working around the enemy's right flank. A patrol of 4 men and a non-commissioned officer, which has been out to the right front near the house 500 yards west of 560, has fallen back from there to the woods due north of that place. A private of that patrol reports as Major D reaches the squadron, saying:

> The corporal sent me to report that we fell back because a strong hostile infantry patrol had started to beat up the woods near that house (points to house 500 yards west of 560).

Another patrol of a non-commissioned officer and 4 men, out still farther to the west, has not been heard from. The hostile cavalry has fallen back on the hostile position and has not been seen since.

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Major D quickly assembles his captains, adjutant and lieutenant Y of Troop D, and orders:

> You all know the situation in our immediate front. Our army is engaged, its right being at Two Taverns.
>
> Our detachment will attack the position in our front at once, 1st Infantry straight down this road, 2d Infantry along the ridge to our left. Artillery near 2d Infantry, 3d Infantry in reserve. We will send half a troop around the enemy's left, to watch for hostile movements in that direction, and move with the remainder of the squadron toward Square Corner, to cover the main attack and threaten the hostile right.
>
> Lieutenant Y, take half of Troop D, move rapidly to that woods (pointing to woods 600 yards to the northwest) where you will find a patrol of Troop A. Pick up that patrol and then reconnoiter the hostile left flank. There is another small patrol of Troop A somewhere to the west of here.
>
> Endeavor to locate accurately the left of the hostile position, also give ample warning of any hostile movement from that direction. Send reports to the detachment commander by way of the nearest infantry commander. Move out at once.

He then continues:

> Captain R, you, with the remainder of Troop D, will act as advance guard of the squadron. Send some men ahead with wire cutters to open broad gaps in the fences. Move due east until you have crossed the second ridge, then south to Square Corner. There is a friendly patrol about there (points to 614) and the squadron quartermaster with a patrol is out somewhere near where we are going. Move at about six miles per hour.
>
> The remaining troops will follow the advance

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guard at a distance of 600 yards in the following order: C, B, A. Troops will cross the ridges in succession in column of platoons at a gallop. Captain S (Troop A) will recall his platoon in our front, having it join the troop. He will have the patrol at 614 remain where it is until relieved by the infantry scouts and then rejoin the troop.

I will ride with the advance guard.

Join your troops at once and move out.

On reaching Square Corner, Major D directs his squadron adjutant:

Take eight men of Troop D and ride to Two Taverns. Inform the army commander of the situation of the detachment and as early as possible get information of the situation there to us.

Further intentions:

Major D will carefully reconnoiter the woods west of Square Corner and, if unoccupied or held by a force which he can drive out, will occupy it. He will remain there in concealment, covered by small covering detachments, until the attack becomes developed, when he will join in the attack, either mounted or, if necessary, dismounted, but, if not needed to carry the position, he will, when he sees that the attack is about to succeed, push forward toward Boneauville to attack the retreating hostile columns. He will also send small patrols behind the hostile right to obtain information.

2d Requirement:

Captain R, Troop D, when Lieutenant Y's order is given, says:

Take the 3d and 4th Platoons.

After receiving the full order, Captain R rides to his remaining half troop, orders them to mount, and says:

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Our detachment is going to attack the position in our front, main attack along that ridge (points). The squadron will move rapidly east until we have crossed the second ridge and then south to Square Corner. We will act as advance guard. Lieutenant Z, take eight men, all with wire cutters, and act as the point, cutting a gap thirty yards wide in each fence crossed. Make good time.

I will follow at about 300 yards with the remainder of the troop.

Captain R then moves his half troop to the eastern edge of the corn and, as soon as he is sure the fences at 607 are open, he forms line and crosses the ridge at a gallop. He further conducts his advance guard in the usual manner and follows the route designated. He is careful to observe the west slope of the ridge behind which the column moves south.

Captain S rides rapidly to his lieutenant between 560 and 581 and orders:

The squadron is moving east and then south. We will be at the tail of the column. Withdraw your platoon and join the troop.

After the platoon has joined, Captain S further explains the situation to the lieutenant. After Troop A has crossed the ridge at 607, he orders his lieutenant:

Take charge of the troop and remain in the column. I will soon rejoin, as I am only going to visit that patrol (points).

He then takes a trumpeter with him and rides to 614 and orders the sergeant there:

The squadron will move east till it has crossed that ridge (points), then it will go south just behind the ridge. Remain here in observation till some of our infantry scouts come up to you, tell them what you

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know of the situation and then rejoin the squadron. In the meantime send any important information both to me with the squadron and to the infantry that is coming up behind you along this ridge.

He then rejoins his troop.

Each captain of the main body of the squadron forms column of platoons in the corn and then gallops over the ridge in succession. They then form column of fours and, in that formation, follow the advance guard at 600 yards, each troop forming column of platoons to cross the second ridge at a gallop.

Lieutenant Y, on receiving his order, goes to Troop D and orders:

3d and 4th Platoons, Mount. The column follow me. By trooper, Gallop, March.

He rides down to the draw to the shelter of the trees along the creek and follows the creek till the small woods are reached. Here he forms fours, picks up the patrol from Troop A, and then, putting out a point, moves west to the second ravine, thence up the branch draw to the edge of the woods at the head of the draw 600 yards northeast of 572. As he crosses the second ravine he orders:

Corporal, take the other men of your set of fours, move south to near the head of this ravine and then to the small ridge just east of there. Remain there in observation to the south and east for any hostile movements. Stay out until you are recalled. I will be in the south edge of that woods (points).

On reaching the edge of the woods he orders:

Sergeant V, take two fours and move south behind this ridge. Reconnoiter that hill (611) to find out the enemy's dispositions. That hill is about the left of his infantry line. I want you to find out just

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where the hostile infantry is and how strong it is. There is a small patrol of Troop A somewhere near where you are to go. Remain out until recalled. Send messages to me here.

To another sergeant he gives orders:

You heard my orders to Sergeant V. Take one four and keep west of Sergeant V's patrol; reconnoiter behind the enemy's left flank toward Boneauville. I want information of the location and movements of considerable hostile bodies. You need not send reports about hostile patrols. Send reports to me here.

Lieutenant Y then posts two videttes to cover his party, dismounts the remainder of the men and leaves them under the command of a sergeant, while he takes two privates as orderlies and rides to the house just to the southeast, from which place he reconnoiters through his glasses.

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MANEUVER PROBLEMS*

A Morning Maneuver

General Situation:

Blue, South, and Red, North, are at war. The main armies are in contact near the frontier north of Atchison. The Missouri Pacific Railroad is the Blue line of supply and is guarded by detachments along the line. Repeated raids have been made against this line.

Special Situation—BLUE:†

Your command has just arrived here to protect the railroad bridge over Corral Creek (assumed as important). Rumors have reached you of raiding parties in the vicinity.

Special Situation—RED:‡

Your detachment belongs to a strong raiding force sent from the main Red army to interfere with the enemy's line of supply.

This morning you were detached to destroy the railroad bridge over Corral Creek and capture or disperse the small guard believed to be there.

Your main body is to operate from Fort Leavenworth as far north as Kickapoo and to be reassembled this afternoon at Taylor school house.

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*Army Service Schools Maneuvers, 1909–10.

†General and Special Blue Situations were handed at 9 A. M. to the commander of two Blue companies near the Missouri Pacific Railroad bridge over Corral Creek.

‡General and Special Red Situations were handed at 9 A. M. to the commander of a Red battalion near Merritt Lake.

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A Night Maneuver

General Situation:

Kansas, Blue, and Missouri, Red, are at war. A Missouri force has invaded Kansas and advanced to the west using the U. P. R. R. as a line of supply.

Special Situation—BLUE:*

Your command has been sent to this vicinity to destroy the railroad bridges on the U. P. R. R. near Prison Lane by a night attack.

You reached here before dark.

Special Situation—RED:†

You have been placed here with your detachment to guard these two bridges on the line of supply.

A Battle Maneuver

General Situation:

Two hostile armies are engaged in battle. The Red (northern) line extends from Engineer Hill west to Frenchman and is intrenched. The Blue line faces it.

Special Situation—BLUE:

Your command‡ has been ordered to attack the front of the hostile position covered by the target butts.

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*General and Special Blue Situations were handed to the commander of two companies of Blue infantry at the southeastern corner of National Cemetery, Fort Leavenworth, at one hour before dark.

†General and Special Red Situationswere handed to the commander of one company of Red infantry at the railroad bridge west of Prison Lane, one hour before dark.

‡A battalion in Corral Creek opposite the butts.

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Special Situation—RED:

Your command* is charged with holding this line of butts against attack.

Suggestions for the Preparation of Maneuver Problems†

1. Give them a semblance of reality.
2. Make them simple and as brief as possible.
3. Make them illustrate some tactical idea or principle.
4. Make them as instructive as possible.
5. Adapt the problem to the number and quality of troops involved.
6. Have them contain only such information as in war the commander might be supposed to have, and require, where practicable, the gaining of necessary information by military means, as reconnaissance.
7. Make the desired contact certain to result and on ground where it is permissible.
8. Introduce as few unnatural conditions as possible.

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*One company at the butts, Fort Leavenworth target range.

†Outline used in Course in Construction of Problems, Army School of the Line, 1910–11.

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PART II

SECURITY AND INFORMATION

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PATROLLING*

"A commander may be excusable for being defeated but never for being surprised."

IN talking on this important subject it is not deemed necessary to repeat what is given in the manuals in unmistakable terms, but merely to add something in the way of explanation and interpretation.

The importance of this part of our work has greatly increased in late years.

As an example, take our outposts. Under present conditions we no longer contemplate, except in very rare cases an unbroken line of sentinels, but rather fewer sentinels and a great deal of patrolling. This method is less exhausting to our men and more effective.

Likewise on the march, whether forward or in retreat, we must have information that can be obtained only by patrolling.

We must also have information of our enemy before a combat. Fifty years ago such information could be more easily obtained; ranges were shorter.

Today success depends largely on keeping the enemy in ignorance of our movements and location and still more on knowing his every move. With the present tendency in the color of uniforms and the enemy's efforts to keep us in the dark as to his location and movements, how are we to gain this information and to prevent the enemy from gaining more than is unavoidable? Primarily by patrols, more or less backed up by larger bodies. Much of this work must and will be done by the cavalry. It will do the patrolling at a

*Paper read to the National Guard of Wisconsin, May, 1909.

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distance and until the armies come into close contact. But after the armies are in contact the infantry patrols will have to be both numerous and industrious.

Patrols may be sent out to gain information of the enemy or to prevent the enemy from gaining information, or their mission may be a combination of the two. Besides, there are many occasions for sending a patrol on a special mission of some kind. The leading and conduct of the patrol must vary with the conditions of the problem. There can be no fixed form, no hard and fast rules to be learned that will make us efficient patrol leaders.

Let us look first at the problem of the commander who sends out the patrol.

Patrols should be used freely. This does not mean sending out patrols which can be of no value; but that it is much better to use patrols for the purpose of gaining information than to butt in with a larger force and have it butchered, for a good patrol can, with less risk, get you information without which you may sacrifice a large part of your command. The work is often hard and dangerous, however, and such work should never be required needlessly.

In determining the number of men to be sent in any given patrol, you should bear in mind that the smaller it is the better, provided it is strong enough to carry out its mission. The smaller the party the more easily it can be concealed when necessary. On the other hand it must be large enough to accomplish its mission. If messages are likely to be sent back before the patrol finishes, enough men must be in the party so that, after deducting these messengers, there will still be enough left to complete the work. If the patrol be only to gain some point, look around and return, with no idea of fighting, two men will probably answer better than more; but when the patrol is to drive back or resist any hostile patrols that may be encountered more men must be sent.

Before sending out a patrol, have clearly in mind what

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you expect of it, what it will probably have to do; then determine the minimum number of men necessary for such work and assign that number. Less than two men should never be sent.

Next, select the man to lead the patrol. Patrols differ greatly in their importance and in the difficulty of leading them. On outposts much of the patrolling between groups and along parts of the line is simple in its nature, and patrol leaders can practically be taken from a roster. Any average soldier should be able to act as such leader. Again a patrol is sometimes pushed out on a road simply to watch and give warning. No great ability is required for this, nor very special training. The same is true of many of the patrols sent out from an advance or rear guard. But sometimes the leading of a flanking patrol in an advance guard will present a task of greater difficulty. The leader will have to cover considerable space with few men; the correct leading will demand an eye for ground, judgment as to what features require to be examined, and ability to read "indications." He will generally need good judgment, courage, endurance and tactical ability in handling his patrol.

Most difficult to lead is the patrol sent out to gain information. In this case it must push far from support, in country closely watched by the enemy, perhaps just before a battle. The leader of such a patrol must be able to estimate the strength of hostile commands (often not easy), to judge of dispositions, to read indications of various kinds, and he must be accurate and reliable. He also must possess judgment, courage and endurance. Such patrols leaders cannot be detailed by roster.

In giving your orders to the patrol leader, make them clear and full enough, so that he can fully grasp the situation, know what he is to do, and know all that is known of the enemy so far as it affects his problem.

The occasions when patrols will be detailed are too many to be all given. Their use with covering detachments

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(advance and rear guards and outposts) are known to you all. In combat of small isolated commands, if the exact location of the enemy is unknown, and you are in doubt as to the lay of the ground, reconnaissance must be made before attacking. This will often call for patrols. During such a combat patrols should cover your flank both in the offense and defense. Just as in large commands cavalry or detachments of some strength are posted to guard against flanking movements by the enemy, so in small commands the same must be done, but by patrols varying in size from two or three men to a squad or section.

When armies remain in contact—that is, with their outposts close together, as often happened in our Civil War—much patrolling of a different kind will be required. Each side will endeavor to learn everything possible about the opponent, especially in regard to his movements, and to gain early information of his intentions. Cavalry will be at work on the flanks and in rear; but it will be a task for the infantry along the line.

Now as to patrol leading; you are all familiar with its elements, but there are some points which, though you know them, have not made the impression on your minds that they should. They are among the things you know vaguely, but do not apply.

The first thing I want to call to your attention is this: whenever you have to lead a patrol, know positively your mission.

You receive an order to go somewhere for some purpose. This order may or may not be sufficient. Be sure that you fully understand the situation—exactly what is expected and wanted. Remember that a patrol is often in very much the same situation as a detached force whose commander must act on his own initiative for the general object. Under such conditions you cannot as a rule wait to receive further or more definite instructions. When an unexpected, great risk presents itself, you must yourself deter-

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mine whether your mission calls upon you to go ahead or back out, and, in fact, how to act in many emergencies.

Bear in mind that, in general, patrols are sent out to gain information—not to fight. Little combats between individuals, or patrols, can have no real effect on the greater issue; so that as a rule you should avoid fighting. But do not apply this rule too generally. It has numerous exceptions. In every case, however, when you meet a hostile patrol, if you have fully grasped your mission you can promptly answer for yourself the question: "Shall I shoot it up or let it go by?"

Another point to consider in connection with patrols is the messages to be sent back.

We all recognize the fact that, as a rule, the sooner information reaches headquarters, the more valuable it is. But this applies only to information which really has value. If you are in doubt as to whether or not information would be valuable, give headquarters the benefit of the doubt and send it in. If you have fully grasped your mission you can usually tell whether the information you have gained should be reported at once or kept until the patrol returns.

Messages must be carefully expressed. Be sure that they are accurate. This does not mean that something merely told you should not be reported; but that it should be reported, not as a fact, but as what it is—a statement by somebody else. It is well to add any information about your informant, such as his credibility, the likelihood of his having correct information, etc., which will help at headquarters in determining the degree of probability of the report.

Observe everything and remember that even apparent trifles may be of great value. The finding of a shoulder-strap, showing a man's regiment, for instance, may enable the chief of staff to determine that the enemy has been reinforced.

We find plenty of instructions as to what a patrol leader must carry; but not enough stress is laid on the things he

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must not carry. Nothing must be carried which, in case he falls into the hands of the enemy, either dead or alive, will give the latter valuable information. Among the prohibited articles should be: orders giving dispositions or other information that would be valuable; maps which the enemy may not have of the country, and especially such maps as have marked on them the location of troops. The Japanese even remove all insignia from the uniforms of the men.

Another thing: a patrol for important work in close proximity to the enemy should be carefully selected and be instructed that, in case of capture, no information is to be given to the enemy. Prisoners taken in battle can generally give little information of importance—the final clash clears up all doubts; but a patrol, taken before a battle, while so much is still dark, may give the enemy information of vital importance.

Let us try to illustrate some of these points. See the two-inch map of Fort Leavenworth and vicinity.

A Northern army is at Atchison, thirty miles north of Leavenworth; a Southern army at Kansas City, thirty miles southeast of Leavenworth. All the country shown on the map is Northern territory.

The Northern commander has sent two battalions of infantry to Weston to hold the place. He knows of no movements of troops from the south. The Southern army commander has sent out a regiment of infantry to seize and hold Weston, his latest information being that there are no hostile troops south of Atchison.

The Northern detachment reaches Weston October 1st. The Southern detachment reaches Platte City the same evening.

On the morning of October 2d the Southern regiment resumes its march on Weston, in ignorance of the proximity of hostile troops. As the head of the advance guard reaches 27, hostile patrols are seen to the front and on both flanks,

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withdrawing in the general direction of Weston. The colonel determines to halt until, by means of patrols, he can find out something of what is in his front. He calls up Lieutenant B and gives him the following order:

> Hostile infantry patrols have been seen on both of our flanks and to our front. You know that the inhabitants are hostile. I do not care to advance beyond this ridge until I know more about what hostile troops are in the vicinity. I am sending a patrol well to the south of the road, another well to the north. You will take 8 men from the 1st Battalion and follow the general direction of the road as far as Weston if possible. Major A has been ordered to furnish you with the men.

Lieutenant B assembles his patrol and inspects it to see that the men have what they should carry, that they have nothing they should not carry, and that they are all in good physical condition. At the same time he determines his mission.

He is to gain information. That is plain. Hostile troops must be near by for infantry patrols do not extend very far. These hostile patrols have probably been watching the Southern troops. The inhabitants are hostile to the South and friendly to the North. From their patrols and the inhabitants the Northern troops probably know all about the Southern force. There is little object in the patrol's trying to prevent them from gaining information. The regimental commander knows hostile troops are near; there is no need to inform him of that fact. What he does want to know is where they are, how many there are and what they propose to do.

Lieutenant B next studies the ground and selects his route so as in general to follow the road, although in such a way as to afford him concealment when desired. He then starts out. When near 29, Lieutenant B sees a hostile

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patrol about 600 yards to his right front. He watches it from concealment for some time and determines that there are only four men in the party and that they are moving toward the Southern main column.

Two question now present themselves to Lieutenant B:

First, shall he attack these men? He answers it in the negative; for these reasons: the noise will attract attention to him and decrease the chances of his gaining the desired information; this hostile patrol, even it if sees the Southern regiment, will gain no valuable information other than what the enemy already has; the chance of his getting a prisoner is not sure enough to warrant such a move at this stage; there remains no other reason, then, for an attack, except to kill or wound that many of the enemy, and, in the meantime, he may have some of his own men hit. These small combats, of themselves, do no good.

Second, shall he send back word to the regimental commander that he has seen this patrol? He answers this also in the negative. The colonel knows there are hostile patrols about. This one should be reported when he returns, of course; but men should not be detached to hurry back with the information.

Now let us assume that Lieutenant B later gets a view of the road leading northeast from 31, and sees what he estimates as a battalion of infantry marching northeast upon it. What shall he do? Shall he go back with the news, or, send word back and continue on? He must not quit yet. He must make sure there are no more troops, and he must find out also where these are going. But this much news is important; so he promptly writes a message stating what he has seen and sends it back to the colonel by two men. He then proceeds on toward Weston. Another question arises at this time. He knows of that road turning north at 35. Is this battalion of the enemy moving toward 37 to get on the flank of the Southern main body, or is it going north, probably retreating by 35? He knows that there was another

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patrol sent to the north which should see and report this. But the question is of such vital importance, and accidents to patrols are so likely to happen, that Lieutenant B should take no chances. He, therefore, detaches the corporal and one man, with orders to conceal themselves where they can see 35, and watch; and, as soon as they determine which route the battalion is taking, to hurry back and report that information to the colonel.

With the remainder of the patrol he pushes on to Weston and tries to determine whether there are more troops in the vicinity and if so, their number and location.

Let us suppose a different outcome, and that Lieutenant B did not see any troops before reaching Weston, except the patrol.

He approaches Weston and with his glass carefully searches the village for signs of hostile occupation. He sees none. He then sends two or three men in, and as nothing develops, he follows and carefully examines the place. No enemy is found; but a boy tells him that "there are a *lot* of soldiers camped on the road leading to the northwest, about one mile from the village." What does Lieutenant B do now? His orders were to go as far as Weston. He has done so. Shall he now return? If he thoroughly appreciates his mission, he will not. He has been sent to find out about the enemy, and all he knows is what the boy tells him, which is not sufficiently definite. If he goes a short distance farther he may get positive information.

Lieutenant B decides to go on. He first writes a report of what he has already seen and heard and sends it back by two men. In his report he gives his source of information, and might add whether he believes the boy to be truthful, judging from the boy's manner, etc.

Lieutenant B now goes on, not directly, but selecting a route which will give him an unobserved approach if possible and which would tend to mislead the inhabitants of the village.

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Suppose he reaches a point from which he can see the hostile camp. In that case there comes in his ability to estimate the strength of the force, the arm or arms of which it is composed, whether the enemy is apparently indifferent to our presence or evidently preparing for some movement, etc.

If Lieutenant B determines the force to be greatly superior to his own then he should withdraw at once and in person report to the colonel what he has seen; for an attack on the enemy's camp will in that case be improbable and the colonel will want his detachments in so that he can speedily withdraw. If, on the contrary, Lieutenant B finds the hostile force to be only a battalion, or at most two battalions, what then? He should at once send this information by two of his men, stating in his report that he is remaining for the present in observation.

Why should he do this? Because the colonel needs to know the strength and location of the enemy at the earliest moment; therefore no time must be lost in getting this information to him. But, since the hostile force is so much inferior to his own, Lieutenant B, knowing the colonel's mission, can foresee an attack. To make this attack the colonel will require further information and Lieutenant B tries to get it. The terrain must be studied to enable the colonel to plan his attack; the outpost line must be determined; where the enemy's position will probably be; the best way to attack it, etc.

Lieutenant B, having accomplished here all he can, starts back, avoiding the route by which he came, especially the village of Weston.

Here note one thing: the enemy was reported to be only about one mile distant. Had this distance been two or three miles, Lieutenant B would hardly have been justified in going on. The distance would have been too great for an infantry patrol, although a cavalry patrol should have pushed on.

Let us now follow a patrol under Lieutenant A sent out

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from the force near Weston that morning. The commander at Weston hears early on this same morning a *rumor* to the effect that hostile troops are approaching from the south. He occupies a good position north of Weston and sends out patrols to look for the enemy.

Lieutenant A leads one of them. He first sees a patrol of the enemy, no other troops are in sight. He at once reports this to his commander, sending back the message by *one* of his men. Here are two points of difference from the action of Lieutenant B—Lieutenant A sends a message back reporting the seeing of a patrol, and he sends his message by one man. Why this difference? When Lieutenant B saw the patrol, his commander already knew that there were hostile patrols in the neighborhood, but in the case of Lieutenant A, his commander did not know positively that there was an enemy, anywhere in the vicinity. This information fixes the fact and it should be communicated at once. He sends only one man with his message, for he feels quite sure that there are none of the enemy between him and his main force; he knows that the inhabitants are all friendly and that they will help rather than hinder his messenger. How was it with Lieutenant B? Hostile patrols were in the country and the inhabitants were all hostile, therefore two men were required.

Lieutenant A reaches a position from which he can see the column on the road. He determines its strength, composition and direction of march. This information is then sent back and he proceeds, keeping the column in sight. Finally he sees the column halt and march outposts formed.

Let us assume that his orders were to return as soon as he determined the strength of the hostile command. This he does, but when near camp, though before he is in sight of it, he sees a hostile patrol of eight men approaching. His patrol is now reduced to four, and he has not been observed. What should he do? Lieutenant A opens the most effective fire possible on the hostile patrol and endeavors to prevent

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its advance. His action, as well as his problem, is very different from that of Lieutenant B when he saw the hostile patrol. Lieutenant A has all the information he can get, the enemy he believes is still in the dark as to the location and strength of the Northern force. If the hostile patrol is allowed to proceed it may gain information of great value to the enemy. This he seeks to prevent.

Patrols sent out to gain some specific and important information, should, as a rule, avoid fighting. The enemy's patrols cannot, of course, be allowed to roam about without incurring danger, but even so, it will generally be better to intrust their intimidation to other patrols and not to the special patrols which are sent out after information.

Suppose that a patrol seeking some special and important information comes near to a certain position from which it could see and gain the information desired, but finds that the position is already occupied by the enemy. Careful reconnaissance leads the patrol leader to believe that he is at least equal to the enemy in this locality. A vigorous attack is in this case justifiable in order to gain the view.

A great number of situations might be presented, but it is not necessary. For, after you had them all solved, it is probable that the first one arising in the field would be different from them all. But if you have grasped the principles, you can solve any problem. Practice is the only sure guide to correct measures. Make problems for yourself and reason out what you should do and why you should do it and you will soon acquire facility in dealing with new situations. Practice on the ground with men gives a training still more valuable.

One other important point I wish to impress upon you. Any information the patrol leader obtains must be gotten back to headquarters. At many maneuvers, I have known patrols to go out and find the enemy but never report that fact until long afterwards. It accomplishes nothing for a

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patrol to gain information if it be not sent in or if it be sent in after the enemy has made his attack.

Both the necessity for and the importance of efficient patrolling and reconnaissance are taught by the history of war. In the Civil War it was neglected and in many cases at heavy cost.

But not alone in that war was that the case; the same neglect has been shown in many others. We have not been the only offenders.

The problems presented to a patrol leader are varied and require for their solution men varying in capacity, from the average private to the best trained staff officer. For the leading of the greater part of the many patrols required, only physical strength and good average intelligence are necessary. But for the higher class of patrol leading the requirements cannot be learned entirely from books. The leader must be cool, determined and persistent. He must grasp the situation, understand the significance of what he sees and hears, must be possessed of good judgment and not afraid to take responsibility.

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PROBLEM 1*

Patrolling

GETTYSBURG THREE-INCH SHEET

Situation, Part I:

A Blue, southern, army, operating in hostile territory, is advancing north 10 miles to the east of Gettysburg and has detached Colonel A with the 1st Infantry to march by the Baltimore Turnpike with instructions to advance toward Gettysburg and, if the place is unoccupied or weakly held, to seize it. If strongly held, to find out the strength of the force there; but to avoid a serious engagement with superior numbers.

At 10 A. M. on September 21, as the point of Colonel A's advance guard is about 300 yards west of the bridge over White Run, it is fired on by a small hostile infantry detachment. The enemy is soon driven off and falls back towards Gettysburg.

Colonel A decides to halt near his present position until he can find out the enemy's strength and location.

He has sixteen mounted scouts present for duty.

Required:

1. What patrols are sent out; give strength and rank of commanders.
2. What instructions are given to commanders.

Situation, Part II:

Assume that Colonel A sends a mounted patrol of eight men, under Lieutenant A, north by the road along White

*Army School of the Line, 1910–11, Course in Tactics—Part I, Map Problem No. 1.

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Run, a similar patrol under Lieutenant B by St Mary's Church to the Taneytown road and a platoon of Company A, under Lieutenant C, to move along the Baltimore Turnpike.

Required:

3. Describe the march of Lieutenant B's patrol until he reaches the Taneytown road, provided he has not in the meantime encountered the enemy.

4. Lieutenant B on reaching the road fork 515 east of Little Round Top learns that there is a small detachment of infantry near hill 592 to the north and another near Powers Hill. What action does Lieutenant B take? Give any message he sends back.

5. Describe the march of Lieutenant C's platoon until he reaches Rock Creek.

Solution, 1st Requirement:

1. Lieutenant A with 8 mounted scouts.
2. Lieutenant B with 8 mounted scouts.
3. Lieutenant C with one platoon of infantry.

2d Requirement:

Colonel A sends for Lieutenants A, B, and C, and, when all are present, each having a map of the country, he gives them the following instructions:

> My orders are to advance on Gettysburg and seize the town, if unoccupied or held by a weak force, but to avoid a serious engagement with superior numbers.
>
> Our advance guard has just struck a small hostile infantry detachment which has fallen back toward Gettysburg.
>
> I want to learn the strength of the hostile force here and its location.

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Lieutenant A, you will take the 1st Squad of the mounted scouts north by the road along White Run to the Hanover Road, thence toward Gettysburg, find out whether there is a hostile force in or about the town and its strength, and locate the left of the enemy's outpost line if he has one.

Lieutenant B, you will take the 2d Squad of the mounted scouts, move south from St. Mary's Church to point 479, thence west to the Taneytown Road. Your mission is the same as Lieutenant A's except that I want you to locate the right of the enemy's outpost line, to get in rear of it and to find out what force he has here.

Lieutenant C, with your platoon move forward along the Baltimore turnpike reconnoitering to your flanks. If the enemy is holding the hills in our right front develop his position, if only a weak detachment, push him back and advance on Gettysburg. Send me word promptly if you cross Rock Creek.

Send messages here. It is now 10.15.

3d Requirement:

Lieutenant B assembles his patrol and carefully inspects his men and horses to see that his men and himself have the necessary equipment and that no one has anything about him which should not be carried. He then proceeds to St. Mary's Church and gives his men all the information he has regarding the situation. He moves out in the following formation: a point of two men, leading man on the right hand side of the road, the other on the left about 25 yards behind him, 50 yards farther to the rear Lieutenant B and five of his men, 50 yards in rear of this group the last man.

The patrol moves out at first at the trot. On reaching the first fork of the road west of Rock Creek a corporal and one man are sent off on the road leading north. Lieutenant B with the map explains to the corporal and his companion

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the geography of this section of the country, telling them where he himself is going, and then gives the following order to the corporal in the presence of his companion:

> Move north on this road (pointing) to near hill 532, observing carefully for signs of the enemy. If no enemy is seen after reconnoitering hill 532 move southwest to the Taneytown Road and rejoin. If you encounter the enemy and cannot get through his force fall back to this road and rejoin.
>
> Remember, if you get positive information of the strength and location of the enemy's main body, it is more important that the colonel receive that information than I. The colonel does not need information as to patrols and small detachments, he knows they are about.

Lieutenant B then proceeds. As he approaches the Taneytown Road his leading man and himself each look over the country carefully from hill 532. Two others are sent toward the Round Tops to see if they are held by the enemy.

While this reconnaissance is being made the remainder of the patrol is held under cover from the north, southeast of the roadfork at 515.

4th Requirement:

The information Lieutenant B receives indicates that he has located two points on the hostile outpost line. He must determine whether to try to penetrate the line or to go farther west and try to turn it. From his study of the ground he does not think it probable he would be successful in an attempt to gain information by trying to penetrate the line. The Taneytown Road and the one to the east are held. The Emmitsburg Road may or may not be open. He determines to find out, and, if that be closed, to move still farther west.

His detachment having rejoined (and he would not wait long for it if it were slow), he moves south to the road

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running west a little south of Round Top to 540, thence northwest to gain the Emmitsburg Road and determine whether that is held.

No message is sent.

5th Requirement:

Lieutenant C explains to his men the situation as given by the colonel and informs them where the other patrols are to go. He then directs Sergeant D:

> Sergeant D, take six men and move north along the road just beyond here (pointing), to where it turns west, thence south of Wolf Hill, thence southwest striking the road near J. Taney, follow that road to the creek and rejoin me at McAllister Hill. Have Wolf Hill and hill 592 examined. If you strike the enemy and are unable to get through, learn what you can of his strength and location and rejoin the regiment here.

To corporal E:

> Corporal, take these four men (designating them), move southwest to the top of the ridge thence to the stream and cross to the ridge on the west side and move north and join me at McAllister Hill.

Lieutenant C, using his map, carefully explains to their leaders the routes each of his small patrols is to follow and the principal features of the ground.

These patrols having started, Lieutenant C sends forward one squad, under a sergeant, as advance guard and follows at 300 yards with the main body.

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ADVANCE AND REAR GUARDS*

As remarked in my talk on patrolling, I am not here to give you a compilation of what is in your manuals, but to bring out and emphasize, as far as time permits, a few points not too clearly expressed in the books.

In our manuals we have, in the case of all the covering detachments, a normal formation, yet, in every case, they prescribe that conditions may require changes. My experience has shown that too many officers are prone to adhere to the prescribed formation, even when it results in an absurdity. Normal formations can be of value only as they help one to understand the tactical principles that underlie the use of covering detachments. They are not models to be blindly followed, and it is open to question if they are not often harmful.

A much better method than learning a normal formation is to master the principles underlying it, and to practice applying these to concrete cases. In other words: in every problem determine your own mission clearly, i. e., what you are to do and why. Bear in mind certain fundamental principles and use your common sense. Now let us try this system in the case of an advance guard.

What is the object of having an advance guard?

First: To prevent the main body of our troops from being shot into while in a formation that prevents their effectively defending themselves. You can all guess at the effect of an unexpected, heavy fire at effective range on a column of squads in a road.

Second: Because under modern conditions the haphazard throwing of troops into action has every likelihood of resulting

*Paper read to the National Guard of Wisconsin, May, 1909.

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in a disaster. If you expect to win in a battle you must have an understanding of the situation, and must so put in your troops as best to meet conditions, remembering that troops once engaged can only go forward, stay where they are, or retreat. This requires that enough troops be told off for the advance guard to enable it first to strike the enemy and then to hold him until the commander can size up the situation, form his plan, and properly deploy his main body to best meet the situation. The advance guard should however be no larger than is necessary, following the rule that all detachments from the main body should be as small as practicable.

Third: Because small bodies of the enemy must not be permitted to delay the march of the main body. They must be brushed aside. The advance guard commander must not allow a skillfully handled hostile patrol to delay the march of a regiment.

Much of the patrolling and marching of flanking detachments across country is exhausting and wears out the troops. It should therefore be reduced, not only in advance guards, but everywhere, to the minumum consistent with efficiency. But efficiency demands that patrols be sent wherever information may be obtained or a possible danger be lurking. As previously stated: never send a large body of troops to gain information where a patrol can do as well.

The greatest element in controlling the method of conducting and the formation of an advance or rear guard is your m i s s i o n. What is the object of the march? What does the commander expect and want of you? How can you best accomplish this? If you use good sense in accomplishing your mission, and bear in mind the foregoing principles, you will be correct, whether your formation agrees with the normal one or not. If you blindly follow a normal formation, the chances are that you will be wrong.

The carrying out of your mission must control the application of the other principles. To illustrate: The enemy in

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in retreat; you are superior to him; it is important to prevent his escape. It may be assumed in such a case that there is little danger of his turning about and attacking you, and therefore, for protection merely, the advance guard would be relatively small. But what is the mission of this advance guard? Evidently to overtake the enemy, then to hold him fast until the main body can come up and complete his ruin. A relatively weak advance guard would answer for protection; but the enemy could quickly throw it off and continue on his way. Hence, in such a case, the advance guard should be strong.

In determining the size of the advance guard, therefore, keep clearly in your mind your mission and the conditions surrounding your problem. As shown above, in a pursuit it will be relatively large. A race for the possession of some important point would also call for a strong advance guard. But in a column which was one of a number of parallel columns marching to attack, the advance guard would be relatively very small; for the commander of the column should keep his men in his own hand and be able to control their deployment and entry into action.

If the country through which you are marching is hostile the advance guard must be larger than if the country is friendly. The inhabitants will help you in the latter case by giving information and will do nothing to injure you, while in the other they will not only not give you much information but they will help the enemy as much as possible, and hence surprises will be much more likely.

In making the detail for an advance guard avoid breaking units, i. e., if three companies are found necessary it is generally better to send the whole battalion; where two battalions are needed let the regiment go. Thus in each problem you must consider carefully your mission in connection with the principles that govern and thereby determine the size of the advance guard. It will vary from one-twentieth to one-third of the whole force.

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The march of the advance guard.

Let us first leave out of consideration the flanks and look only to our front. In accordance with the principles enumerated, information must be sought for, where practicable by means of patrols. Our leading element must therefore be a patrol or, as generally called, a point.

Now the formation of an advance guard is in two principal bodies: a vanguard and a reserve. The first is subdivided into the advance party, which throws out the patrol or point, and the support.

With small bodies of troops, however, there is no necessity for a reserve; in fact it is better to dispense with it. The object of the formation is to prevent any body of troops from being fired into at close range before it has had timely warning for preparation. This time necessarily depends on the size of the body.

Our leading element is a patrol. It is in open order and is always in proper formation and it will be the first to strike the enemy. Following it is the advance party, only a section or so, and for it to deploy is a question of but an instant. The support is larger and so on to the rear until we encounter the main body. Each body in front must afford the one next in rear time to prepare.

The terrain must, naturally, exercise a great influence on the distances separating the detachments. In very broken or rolling country the distances could be much less than on an open plain. The size of the command also makes a great difference. A company or less deploys very quickly; there is little in the way of a plan necessary. In a large mixed command a regular plan of action should be formed, and the larger the body the more time this requires.

In night marches, if in the close vicinity of the enemy and if an attack is contemplated, in case the enemy should be met, it will generally be found that distances should be shorter. Of course, such night marches are made with great caution and should have been carefully planned. On them, ordinarily,

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you would not risk running into the enemy unless you intended in that case to push him vigorously. If this is what your mission calls for, you must be prepared to do it.

Night firing is comparatively ineffective and the attacker's best chance of success is generally to rush the enemy vigorously. For this reason, also, distances should be reduced considerably from what they would be in daylight. Another precaution, well to take, is to have the leading elements march with fixed bayonets.

One can conceive, nevertheless, of a night march in the vicinity of the enemy where it is expected that he will not be encountered and where, if he is met, the commander intends to fall back and avoid an action. The advance guard commander's mission in that case is a very different one: he must arrange his forces in an entirely different manner. Distances should be increased and care taken, by means of connecting groups, to keep his whole command in touch.

No rule can be given. Know what you are to do and why. Study the best way to do it; use common sense.

Now let us consider our flanks.

Here is where a normal formation finds its least application.

The object of flanking groups is to protect the column from a surprise attack on a flank. To attain this object there must be timely warning of the enemy's presence near our flank. How are we to get this needed protection? By so observing the country that if the enemy is where he can attack us in flank we shall know it in time. In this connection bear in mind that in smaller commands line of battle can generally be formed from a column in less time to a flank than to the front, and that fire across a column is not so dangerous as fire in the prolongation of the direction of march. We must remember, however, that modern artillery may be considered as effective up to 3500 yards, although its fire will reach very much farther than this, and that infantry fire is effective up to at least 1200 yards, although this is not its

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extreme range. The measures to be taken to gain protection from this fire will be very varied; many conditions enter into the problem.

With very large mixed commands, as in the case of a division or more, there will be troops marching on parallel roads with cavalry well to the front reconnoitering the country so that no enemy dangerous to this command could well escape attention. Protection for a division is not gained by searching the country 150 yards on each flank. It must be had for several miles.

It takes much time to deploy a division and this should be done before the enemy's artillery is within effective range, or even within long range.

With smaller mixed commands, as say a brigade of infantry with some cavalry and artillery, the distances on the road and the formation of the infantry of the advance guard should be as previously shown. Scouting on the flanks will generally be done by the cavalry. This reconnaissance must generally extend over a front of two miles at least, if the country on the flanks is at all favorable to an attack from those directions and the general situation is such as to make it fairly possible that the enemy might be there.

In cases where we have no mounted troops and, if the enemy is met, he will probably be in force and have artillery, the problem is a hard one. The reconnaissance must be made. Infantry can make it but slowly. Cavalry is almost indispensable in such work.

Where the situation is such as to make an attack from the flank probable, as where you know the enemy is on a road approximately at right angles to that followed by yourself, a flank guard is generally the solution, provided there is a suitable road for it not over a mile away. This, while not called a part of the advance guard, serves the same purpose. In commands not greater than a brigade these detachments are justified only by necessity. A brigade of infantry without cavalry will find much more necessity for them than

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where cavalry is available to make the proper reconnaissance. Even a small force of efficient cavalry can, in most cases, obviate the necessity for flank guards of any size.

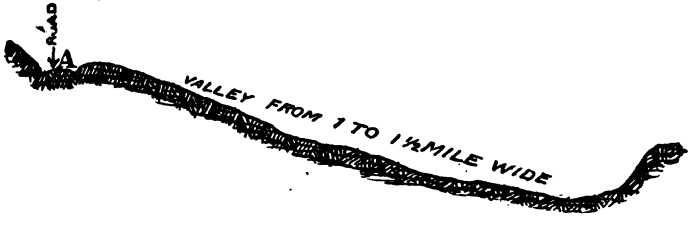
But it is not of armies or even of divisions that I wish to talk today, but of small commands.

The general principles are the same. But without artillery and having only a small force, your protection towards a flank does not have to extend so far.

In most cases your danger will be from about equal forces. If you meet a large force with artillery, you probably can do nothing but get away as best you can.

As commander of a small force, say a battalion or regiment of infantry, you must, if in the vicinity of an enemy, protect yourself from flank surprise attacks. The distance and manner will vary according to the terrain.

Consider a march, first, along a ridge road with a valley close to one side as shown in the cross section.



A=road.

The distance from A across the valley is a mile or more. Suppose the valley to be an open field, affording little or no cover from view.

Would you send a patrol to the right? Evidently not, for you can see as much from the road as a patrol can 150 yards away from it.

But how about the left? You cannot see far enough from the road in that direction. Patrols must be sent out on that side to a distance great enough to secure you against surprise.

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Suppose that on the right, while the valley is generally open, there are some features that would conceal a considerable force of the enemy. Patrols must be sent to examine them in ample time to make sure that you do not meet an unpleasant surprise. But to have a patrol march along parallel to the column would be unnecessary. It would be exhausting to the men and probably delay the march. Even on the left there might be a hill, or some point from which a clear view of the country on that side could be observed. If such is the case, sending a patrol there with field glasses will render unnecessary a flanking detachment, and, indeed, the frequent sending of patrols to prominent points on the flanks will often answer every purpose. These patrols should hurry out from near the head of the column and rejoin at the tail.

Again, the march may be through country that affords cover for the enemy in every direction. It may be that the best solution will be a line of men at intervals of from 20 to 50 yards, or even more, marching ahead of the command; though this last case will be rare.

There will sometimes be terrain conditions, as for instance a road in the bottom of a narrow valley, where the flanking groups will probably have to march parallel with the column. When this is so it is well to relieve them often, or your march will be delayed.

As this is only a short talk and not a book on the subject more examples are not necessary. I want only to illustrate the principle that you must adapt your measures to the problem presented; do not follow mechanically a fixed formation.

As to the size of these flanking detachments: they will vary from two men to a considerable force. If the patrol remains practically in sight of the command, two men will probably answer as well as more. But, if the flanking group is to be at some distance, with, say, an obstacle of some kind intervening, it should be much larger. For instance, if the

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road runs parallel to a railroad about 600 yards distant, with some thick country between, it would be well to send a party, varying from a squad up, according to the size of the command, to march along the railroad.

A problem worked out at one of our maneuvers illustrates the point. A regiment of infantry was sent along a road which led through a defile about 3000 yards long. The west side was nearly precipitous and the road was from 20 to 40 feet below the plateau on this side. The problem was solved on different days by different regiments. The first marched through in the normal formation with a battalion in advance guard and flanking patrols out about 150 yards.

The enemy, a squadron of cavalry, had dismounted and held position on the edge of the plateau looking down into the defile about its middle. The cavalry had out its combat patrol to its left which promptly captured the flankers of the infantry. The enemy then waited until the main body was opposite to them and then poured in a rapid fire at very short range.

A Wisconsin regiment solved it differently. Instead of a patrol of three men they sent a company to the right and much farther out. The combat patrol of the cavalry was captured and the company gained the left rear of the squadron and threatened the led horses. The cavalry now had other work cut out for it than shooting up the column. Another precaution taken by this regiment is worthy of note. The advance guard marched with much greater distances than the normal and there was a distance of several hundred yards between the second and third battalions. If attacked in flank by a small force not more than one battalion would be involved and either the leading battalion (advance guard) would be emerging and able to take in flank the attacking force, or the last one not yet in the defile could take the same action on the other flank.

The first solution followed a form, the second tried to adapt means to the end desired. Which is the better?

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In war nearly every time you get command of the advance guard your problem will present new phases, new conditions to be met.

In every case ask yourself the questions: Can the enemy make a *surprise* attack on me? Are my arrangements such as to exhaust my men unnecessarily? Have I scattered my command too much (by flank detachments, etc.)? If you can give a satisfactory answer to these questions your dispositions are correct.

Remember that large bodies of troops are hard to hide in ordinary terrain.

Patrols sent to the flanks from small infantry columns are apt to delay the march and are less effective than cavalry, but, if you have no cavalry, infantry patrols must be used.

One course is possibly open to the infanry. To each regiment of infantry there are now attached twenty mounted orderlies. The battalion staff officers are mounted. Cannot these men be trained so that when the regiment is operating alone they can be utilized for this work? All of them are certainly not necessary for orderlies at such a time.

Rear Guards.

These are often described as advance guards reversed. As far as formation and distribution are concerned this is nearly correct. Most of what I have already said applies also to rear guards. But there are a few special points I wish to call to your attention which pertain to rear guards and not to advance guards.

Your mission is generally very different. You are not seeking a combat but are trying to avoid one for the main body.

The great danger in a retreat is that it may become a rout. This the rear guard must prevent. It must not allow the main body to be crowded. Particularly is this the case after a lost battle. The pursuer must push his success to the utmost if he is to reap the full fruit of his victory. The de-

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feated command is more or less disorganized and in confusion. If it can gain time to get into shape unmolested it can not be run over; but at first it is practically helpless. The rear guard must gain for it the necessary time.

Take another case: suppose the retreat is not the result of defeat but is ordered rather because the command is so weak that a fight must result in a defeat. The retreat, under these circumstances, if long and crowded will generally degenerate into a rout and cause great injury to the command. The enemy wants, of course, to force a fight. In this case also the rear guard must so delay the enemy as fully to serve his own command.

The troops selected for this duty should be the best available. In large commands cavalry and artillery are very essential for it. The manuals give all these points.

All that I have said as to the applicability of the normal formation, in the case of an advance guard, applies equally here. But there is one point which it is especially essential to keep in mind. A rear guard does not fight from choice but from necessity; to gain time and thus fulfill its mission. In selecting a position in which to fight a delaying action, one requirement must be considered which does not ordinarily enter into the problem when an advance guard is coming into combat, and that is: ease of getting away.

As explained in the books, a strong defensive position must be selected. But you are going to retreat from this position; you are not going to fight there to a finish, and this involves a new consideration.

If you become closely engaged you can only break off with great difficulty unless the ground is favorable. Such ground, therefore, should be selected where practicable. For example, in rolling country you can often find a ridge where you can remain until the enemy is within a few hundred yards; then, as soon as you drop to the rear, you will be concealed until he gets to where you were, and by that time you may be under cover from that position.

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Now a word to the officer who makes the detail of an advance or rear guard. Give your order so that the advance or rear guard commander can intelligently carry it out. If he understands the situation fully, he can determine his mission and know what to do.

As to the general form you can generally do no better than follow the rules given in the Field Service Regulations.

First: Tell him what is known of the enemy and of other bodies of our own troops.

Second: Your plan or intentions in a general way but fully enough so that he can appreciate his mission.

Third: Details as to the march: route, distance from main body, and directions as to special reconnaissances you want him to make. In this latter respect, do not encroach too much on his liberty of action.

When to relieve the advance guard:

The general rule in small commands is to do this in the morning; that is, the advance guard of today will furnish the outpost tonight and stand relieved when the new advance guard marches through the outpost line next morning. This does not put excessive labor on the advance guard. The reserve, or support, if you have no reserve, has not had any harder time on the march probably than the main body; at night it takes all the sentry work and patrolling, the leading troops during the day being the reserve of the outpost at night.

The reason for this is that the advance guard is thoroughly familiar with the situation and has seen the country farther forward and is thus spared a countermarch when the march is completed.

In a retreat the relief is generally made at night. A new outpost is detailed, the rear guard providing protection until it is in place. The rear guard then marches through the outpost and stands relieved. The outpost becomes the rear guard for the next day, if the retreat be continued. The

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reasons are the same in principle as in the case of the advance guard.

In large commands, as a division, the covering detachment is not relieved daily, but often remains out for a week or ten days.

Let us now take the two-inch map of Fort Leavenworth and vicinity and try a simple problem.

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PROBLEM 2*

An Advance Guard

General Situation:

The Missouri River forms the boundary between two hostile states whose main armies are operating about thirty miles south of Leavenworth.

The Western army occupies Leavenworth, with a garrison of from two to three thousand troops, and is sending small parties into nearby Eastern territory to seize supplies and horses.

The Eastern army has ordered a force to Platte City to clear this country of hostile raiders. This force, on October 1st, is marching north on the east side of the Platte River.

Special Situation:

On the hill south of 76 the commander of the Eastern force learns that there are about seventy-five hostile troops east of the Missouri River and that they are somewhere between Tracy and Farley. He thereupon orders Company A, 1st Infantry, to cross the Platte on the bridge at 72 and defeat and drive away this hostile company and rejoin at Platte City.

Required:

Conduct of the March of Company A and the advance guard.

Discussion:

Let us briefly state a method of conducting this company's march and then examine it more closely. We will assume our company to be at full war strength—with four squads in the first section.

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From the hill south of 76 and from the map a good idea of the country is formed by all the officers of the company.

The company quits the column at 76 and there halts while the captain details the leading section as the advance guard and gives its commander his orders.

The advance guard then moves out as follows:

In the lead are four men and the corporal of the first squad; two hundred yards behind them the remaining three men of the first squad; two hundred yards further back the front rank of the second squad; two hundred and fifty yards further the remainder of the advance guard; and, six hundred yards in rear, the main body. The reader is recommended to make a sketch of the formation.

The column moves directly to Farley and finds no enemy there. When the leading patrol reaches Farley the place is examined to see if any of the enemy are there. Then one man moves west until he can see along the 42—32 road. Nothing being seen, he signals back to the patrol at Farley and all five of the men go up on the bluff and proceed north across country, really becoming a left flank patrol.

The second group and the column halt while Farley is being examined and until the patrol moves to the bluff. The leading patrol having gained the bluff, the march is resumed. The second patrol, now become the point, moves from 44 to 46 and there turns off to the right and becomes a right flank patrol; the third group now becomes the point and proceeds along the 48—50 road. The other parts of the column follow in the same order as before.

Let us now follow our left patrol.

The corporal and his four men having reached the high ground near 975 and having examined the ground here proceed north on the ridge in open formation until they reach the knoll not marked by a number on the map. Here they divide. The corporal sends two men to hill 960 thence to proceed north to Cannon—900 hill—Mayo—to west of hill 900 near 50. With the other two men he goes to 1000—860—

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the high ground north, following along near the ridge to 930, north to 950, to hill 960 east of Alexander on the 14—50 road.

These patrols thus far see nothing of the enemy, but, shortly after, the point on the road is fired into, and, a few minutes later, the company is seen to be attacking a force of the enemy near Baldwin. The corporal now assembles his men and disposes them so as to cover the company's left flank and to be able to detect any movement of the enemy in that direction.

The second patrol after turning east at 46 increases its pace, follows the road for about 300 yards, and then goes to hill 930, along the bluff, past Peters to 48, observing carefully on the way the country north of the road 48—60, and then rejoins the column. Just before reaching 48, two men are hurried forward (at a fast walk) to leave the road between Robket and Baker, go to the edge of the bluff and, following along the ravine back to the road, rejoin the column. After crossing the ravine near Baker no right flank patrol is necessary until near 50; but there the enemy is struck and and the combat ensues.

There is no necessity of following in detail the march of the parts on the road, except to state that whenever a patrol is sent out from a leading element, men are sent forward to replace those sent out. If the detaching of the patrol can be foreseen men to replace them should be sent forward in ample time or even started out with the leading elements.

Let us now see whether the above plan answers the purpose of an advance guard.

First: Will it protect the main body from fire from the front at short range? The ground the company must first cross is open and an enemy at Farley or on the hill nearby would have a clear field of fire for the full range of their rifles. Have we protected against this at the beginning? From the leading patrol to the head of the main body is one thousand two hunded and fifty yards and the leading

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patrol should see the enemy at least a few yards before reaching him. Infantry fire at a range of over thirteen hundred yards at a target of that size would not be very effective in the first few seconds and three sections could deploy quickly. Only patrols, always assumed to be in open order, precede the main body of the advance guard. It is six hundred and fifty yards from the leading patrol to this body, only two and a half squads in strength. It seems then that the requirement is fulfilled for this part of our march.

Turning at Farley toward 46 one patrol less is in front and the distance is only one thousand and fifty yards from leading patrol to main body. But there is a patrol on the bluff and it is fairly certain that no enemy is south of 46 between the bluff and river. North of 46 the distance is reduced to eight hundred and fifty yards. But the country is broken and rough and that will be ample distance in such terrain. When places occur where the field of fire from the front would be too open and long, the main body would be held back, and be closed up again on the leading elements when terrain was reached of a different character. Delays due to the slowness of flanking patrols would give opportunity for this without hurrying.

As to the second requirement: the time needed to put the main body properly into the fight; in so small a command this condition is generally fulfilled when the first requirement is met.

Third: let us look at the flank protection. We have used none until reaching Farley. Was any necessary?

According to the map the entire country southwest of the road is flat and open and can be seen from the hill and from the road. To the northeast slightly more cover for an enemy is available, but not much, and the enemy would hardly put himself in such a pocket; with our main column to his east and this company making for Farley. He would scarcely be so obliging.

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From Farley north on the west side of the road the country is covered for about one thousand yards as efficiently as can be done with so small a force. The distance of one thousand yards is sufficient for a company's protection, knowing as the commander does the small size of the enemy's force in the neighborhood. Besides we are in friendly territory; farm houses are numerous and information is easily obtained. Had this been hostile country, I should recommend increasing this patrol to a squad, so as to have a central group.

On the other flank we have less patrolling for we have considered again the improbability of an enemy pocketing himself against an unfordable river with the main body of our force able to shoot into him across the river and our company threatening to cut him off from home. We also take into account as before the friendliness of the inhabitants. Still, the enemy might not know of our main body and might be caught in this bad situation; so those places which would conceal him from view should be examined. This has been done. If the patrols on this flank are properly conducted our object will be attained.

Fourth: I think it is clear also that we have not used too many men for this exhausting work.

Now suppose that in this problem there was a battalion detached instead of a company, and the enemy was two or three companies. What changes would you make?

My answer would be: simply consider the company already discussed as the advance guard, form it exactly as above and have the main body (three companies) follow six hundred yards in rear as the main body. One modification to be made, however, would be the detaching of another patrol from the main body of the advance guard to follow between the two parts of the first one through the country west of the road.

Suppose it was a regiment detached against two battalions: simply have the other two battalions follow the

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first as main body at from six hundred to eight hundred yards. In this case there should be a squad on the left after reaching Farley and another squad follow as a second patrol.

We now have all the parts of an advance guard. The leading company is the vanguard; its first section the advance party; the other three companies of this battalion the reserve of the advance guard.

As the size of the command increases more protection both on the flanks and front is necessary and this solution provides for it.

In solving a rear guard problem you apply the same method, remembering that your mission is very different.

I have not gone into details as to connecting files and how patrols are formed and led—that is assumed to be done correctly—but a study of this problem will show the importance of carefully instructing our men in patrolling.

The turning off of the leading patrols, as done in this case, is of course somewhat exceptional. From the view on the hill south of 76 from the map, it could be foreseen that these patrols would be needed and using them in this way gave additional security to the march during a critical period and saved delay later. Without them the distance must have been increased for this part of our march. Each problem will present its own special features. This same one may never occur with you; but others will. Do not try to follow a normal formation, but adopt the means necessary in each particular case to meet its special conditions.

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OUTPOSTS*

The object of an outpost is to protect a body of troops, while in camp or bivouac, from surprise, and thus prevent an attack being delivered against it before it has had ample time to form up. There is an exceptional case where a command has only one object: to retreat. In such case the outpost must give warning and hold back the enemy until the command can get in march.

What is the correct formation for an outpost? The answer appears plain: any formation which secures the object aimed at the most efficiently with the fewest men, giving unbroken rest to the remainder of the troops. In no part of tactics does a normal formation so little apply as in that pertaining to outposts.

In determining the outpost strength and dispositions we must consider, as in all other covering detachments, the nature of the terrain, the probable direction of attack, the range of weapons, the country—whether hostile or friendly, the supposed proximity of the enemy, etc.

Let us look at the bearing of some of these conditions on our problem.

In a country like most parts of the United States, with its telephone and telegraph net, its loyal and intelligent population, we can safely count, on the one hand, on little valuable information being given hostile troops, and on the other hand, on the people reporting the movements of the enemy to our own troops. There will, however, be many cases in which foolish or stupid people will give the enemy valuable information and other times when they will fail to send information to friendly troops. Also, small hostile detachments can often evade observation.

*Paper read to the National Guard of Wisconsin in May, 1909.

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Accepting the above we see that we cannot dispense with covering detachments, even in friendly territory, although there the danger of surprise is less.

When the hostile main body is a day's march or more away we may feel certain that only small bodies of infantry and cavalry need be feared. Large bodies of infantry and artillery do not move far in a night, if at all, and concealment is very unlikely.

The most important consideration, however, is the nature of the enemy. If he has recently been defeated and you are pursuing you do not require as strong an outpost as when the conditions are reversed. With an aggressive, active enemy your protection must be greater than with an enemy who seems to be strictly on the defensive.

Of course outpost dispositions must vary with the size of your command. A company or less, bivouacking in a state of readiness to form for action, does not require an elaborate outpost. Two or three sentinels and a patrol or two are ample. A brigade or more needs considerable time to form for action. The relative strength of the outpost is therefore influenced by many conditions, and will vary within wide limits. At one time one-twelfth of the troops may be large; at another, one third may be scarcely enough.

The placing of troops on outpost follows the general rules given for advance and rear guards. Their distance from the main body must be sufficient to keep the main body from being fired into before it is in proper formation. If it is probable that the attacker will open with artillery the distance must be greater than if only musketry fire is to be expected. The size of the main body, and the time it needs to form, exercises an influence on the distance. The stronger the outpost and the stronger the position it occupies the longer it can probably delay the enemy and keep him from closing in to effective range.

In this connection, we must also consider where we propose to make our stand if attacked. If the defense is

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to be made in the position occupied by the main body less time and distance will generally be required than if a position forward of that is to be taken.

When we come to placing our men on outpost we must bear in mind that we must learn early of the approach of the enemy in order that timely warning may be given, and that the enemy must not encounter our troops until they are in proper formation for such a meeting. As in advance guard formations a patrol or its equivalent must be the first to meet the enemy, and the succeeding bodies of troops must each be able to form before the enemy can reach them. A squad deploys very quickly.

The time of day and the weather conditions must be considered. If the weather is clear, in an open country, movements of the enemy can be seen much farther than under different conditions. Naturally, if you can see for a mile or more from your advance positions, the latter need not be as far from the main body as when the enemy can approach much closer before being seen.

When it comes to dividing up the troops on outpost, the terrain is an important element. There are often portions of your front over which the enemy cannot advance, as, for example, a swamp, a very thick jungle, etc. There are other portions which, while it is possible for the enemy to cross them, it is extremely unlikely that he will. Such parts of your front should not receive the same attention as the others. There an occasional patrol will answer every purpose.

At night, marching troops must generally keep to the roads. A large force cannot move far across rough country during the night and be in condition to accomplish much against an alert enemy. In exceptional country it can be done, but generally the roads are the important points to watch, especially when hostile cavalry is to be feared. Portions of your front that the enemy may possibly cross, although he is not likely to do so, must not be neglected; a few men, or, often better, patrols to watch it should be pro-

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vided. Apportion your men according to requirements, taking full advantage of the ground to economize strength.

You have just finished the study of "Security and Information," therefore I make no attempt to go into details of formations or to cover all points, but merely aim to point out some of the more important features which are often overlooked. It is so much easier always to follow a normal formation that too many do so, overlooking the fact that circumstances and conditions require variations from the normal form. It may even be said that the normal formation is decidedly exceptional in practice.

In solving your problem first determine your mission. Weigh carefully what you know of the enemy; determine his probable course of action and the distance necessary to hold him off; then look over the ground in your front and consider what portions must be strongly held and what portions may be ignored. If you are to detail an outpost decide on the number of men necessary and make the detail, breaking tactical units as little as possible. If you are detailed with your company or battalion to form the outpost, after studying the question as before apportion your men so as best to carry out your mission. A reserve of greater or lesser strength, according to circumstances, should always be held in your own hands.

After you have decided tentatively on your dispositions, look over the ground more carefully and study every avenue of approach for the enemy, asking yourself whether your dispositions are such as to secure timely information of a hostile advance by any of these and to cause the necessary delay to the enemy. Then examine your dispositions and see that you are using no more men than are necessary for sentinels and patrols. If your answers are in the affirmative you have probably solved the problem correctly.

Outposts can best be studied by considering concrete cases.

Let us take the following problem on the two-inch map of Fort Leavenworth and vicinity:

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PROBLEM 3

A Company on Outpost

Situation:

A Northern army is at Omaha, a Southern army at Kansas City. The country shown on the map is Southern. The two bridges over the Missouri River near Leavenworth have been rendered impassable.

On May 1st, the 2d Battalion, 3d Infantry, of the Southern army arrived by marching from Kansas City to hold the railroad crossing at Beverly; the remainder of the brigade to which this battalion belongs is to follow the next day. These troops are to cover the repair of the bridges and to protect the country in the vicinity from raids.

Major A, in command of the 2d Battalion, arrives at, Beverly at 3 P. M., and here learns from friendly inhabitants and spies that a considerable force of the enemy was expected to reach Atchison (27 miles north of Weston) that evening and that there are already small parties of hostile troops from ten to twelve miles south of Atchison.

Weather clear.

Required:

1. Major A's dispositions for the night, and his reasons therefor.

Discussion:

Let us assume that Major A has marched his battalion with Company E as advance guard, the other companies following in the order F, G, H.

Major A is at Beverly at the head of his main body. The advance guard having been notified to halt, as this is

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the end of the march, will promptly establish the necessary march outpost to cover the battalion until the halt and outpost order is issued.

Major A's mission is to hold Beverly until the brigade arrives tomorrow. The information received convinces him that he cannot be attacked during the night by a very large force, but that detachments, probably together equal to or stronger than his own, are within striking distance and may attack.

He must therefore select his camp and post his outpost in such a way as best to enable him to carry out his mission.

He sees at once that to protect Beverly he must not camp there. The spur at Spinner about 500 yards east of Beverly commands it and the place could not be held with an enemy of about equal strength at Spinner. Conversely, if Major A holds Spinner the enemy can do nothing at Beverly until he first drives away Major A's command.

This spur also affords a good defensive position against an attack by the enemy. To the west and northwest is an open plain for nearly 1500 yards, beyond this the timber is too dense for the successful movement of troops. To the north and northeast the roads are well controlled and a fairly good field of fire is afforded, especially towards the east and towards the north where the enemy has Bee Creek to cross in plain view at effective range.

The spur north of this one does not afford as strong a defensive position in which to meet an attack from the north and does not so well cover the railroad junction. Other good positions in the neighborhood uncover Beverly too much.

As there is sufficient water for his men at the farm and the animals can be watered in the streams nearby, Major A decides to camp at Spinner. He must now decide on his outpost dispositions to secure his camp against surprise.

He first studies the roads available to the enemy. There is a road and, parallel to it, a railroad along the river, from Weston

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to G, which directly approach his position from the direction of the enemy. From Weston the enemy has a road by 21 to 49 thence to G or E. From E he can move 600 yards south and follow the railroad to the northwest and approach the position at Spinner. A wider detour to 10 and an attack from the south is possible but highly improbable since the enemy would thus uncover his own line of retreat, have a long march and gain little. If the enemy attacks south of the railroad he will undoubtedly turn the ravine west of Ode and not try to force a crossing.

An advance during the night, between the two roads forking at 49, is also improbable, for the stream has steep banks and constitutes a decided obstacle. The enemy could, indeed, cross on the bridge south of 49 and then move across country but he would lose time if he attempted it by night. The enemy may turn off at 25 by the farm road and move down the spur; but from that spur to the Spinner position is about 1200 yards; to advance from it would be difficult, and the range is long for decisive effect with infantry fire.

From his study of the country Major A concludes that if he is attacked before the arrival of the brigade the enemy will approach by one of the roads above mentioned and the attack will probably be made north of the Rock Island Railroad. Which road or roads will be used it is impossible to foretell. The enemy will not have artillery so that rifle range is all which need be considered. Much of the line need only be patrolled but all the roads must be held. There is just enough danger of a wide turning movement to make it advisable to keep a watch towards the south. He further decides that if attacked he will make his fight for the position at Spinner, and that he will not reinforce the outpost but will have it fall back, when pressed, so as to uncover the main position.

The outpost line should therefore extend from the Burlington Railroad north of G around to the southwest as far as the Rock Island Railroad. The distance to the front of

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the line of observation need not exceed 1500 to 2000 yards. As only a few points have to be more than merely observed not more than a hundred men are necessary but, observing the rule not to break unnecessarily a tactical unit, he decides to detail an entire company. For the reasons explained in the talk on advance guards, he selects Company E, the present advance guard. The troops for a detached post, far from the outpost proper, are generally taken from the main body, or, in large outposts, from the reserve. Major A concludes that a detached post of one squad, located just east of the little woods south of Spinner, can effectively observe that section and decides to take that squad also from Company E. His reasons for taking it from the same company are that the outpost is strong enough without it and that all the men, who on account of extra duty today and tonight should tomorrow be spared as much fatigue as is convenient, will belong to one company. The other three will be intact.

Having arrived at this decision Major A is ready to issue his h a l t a n d o u t p o s t order. This, in so small a command, would usually be verbal and be given directly to the officers. Major A therefore assembles his company commanders and issues the following order:

> Information has been received that small parties of the enemy were seen about 12 miles north of here today.
>
> Our brigade will reach here tomorrow.
>
> The battalion will go into camp near the Spinner house yonder.
>
> Company E, less one squad, will constitute the outpost and will establish the line from a point about three-fourths of a mile north of here on the Burlington Railroad to near 45, thence southeast to the Rock Island Railroad.
>
> A detached post will be established by me south of the camp.

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In case of attack we will defend a position near the main camp which will be entrenched as soon as camp is made.

Captain E (Company E) will detach one squad under a sergeant to report to me.

I will be with the main body.

Let us assume that Captain E has studied his map and the ground so that when he receives his order he is ready to post his men. His course of reasoning and conclusions are practically the same as those of Major A.

With so small an outpost there will be no reserve. The squads which constituted the advance party, flankers, etc., during the day will be in the support during the night.

Captain E decides to have the support bivouac a little south of the bridge north of G, to which point he marches his support, if it is not already there, and then issues his outpost order to his company.

Order:

Small parties of the enemy have been seen today about 12 miles north of here.

The battalion camps on that hill near the Spinner farm house.

The support will bivouac here.

If attacked, the position at Spinner will be held.

First Lieutenant A, with the first two squads and Sergeant X, move out on the F—E road about 500 yards beyond the second bend where the railroad diverges from the wagon road. You will constitute Picket No. 1. You will observe the road and railroad in your front and patrol to the head of the ravine on your north.

Second Lieutenant B, you will take the next two squads and move out on the G—47 road about 300 yards beyond 47 and constitute Picket No. 2. You will carefully guard the bridge on your north and patrol east to that ravine running south from Bee Creek.

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Sergeant Y, with the next two squads, move up the river road to near the next bridge. You will constitute Picket No. 3. Place a cossack post to your right on that hill (pointing) with instructions to observe carefully the country to the north. You will patrol along the railroad to the north and prevent the enemy's moving undetected through the woods along the river.

Cooked meals will be sent to the pickets from the support.

I will be with the support.

As soon as the pickets thus detailed are in position the temporary or march outguards are relieved and come into the bivouac of the support.

Captain E then establishes his bivouac. A non-commissioned officer and three men are detailed for guard—3 reliefs of one man each. A sentinel must be on duty all the time at the bivouac.

Men are also detailed for patrol duty; at least one visiting patrol must be out all the time. In this case two men are sufficient for a patrol. Three reliefs for patrols—6 men. The patrol starting out from the support would move to Picket No. 1, thence to No. 2, thence to No. 3 and back to the support. The round should be made in less than one hour.

Having attended to the above, Captain E now inspects his pickets and satisfies himself that his orders have been understood and are being properly executed. He should make any changes he finds necessary. Captain E now makes a report of his final dispositions to the battalion commander. It is advisable to show the dispositions of the troops by means of a simple sketch.

Captain E causes all the men who are to do the patrolling during the night to make at least one round before dark in order to learn the country.

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Let us now see what the picket commanders do.

Lieutenant A establishes Picket No. 1, 500 yards east of the second bend in the road. At this point the distance between the road and the railroad is about 100 yards. He decides to make his bivouac between the two, to place one sentinel on the wagon road, one on the railroad, and one between at the picket. Double sentinels are the rule on such posts as these on roads. One double sentinel cannot satisfactorily do what is required and two such posts require too many men. In this case all three sentinels are so close together that the middle one may be considered as the "double" for each of the others. This requires nine men for sentinel duty. He must have three patrols of two men each—6 men. Two non-commissioned officers can divide the night in charge of the picket. Three would be better but he has only two left, and Lieutenant A can take himself some of the work. He has seventeen men besides himself in the picket.

He decides to have one patrol out all the time. It will move from the picket north to the head of the ravine, thence southeast to the knoll near E, in the northeastern angle of the wagon road, from which both roads can be seen, then back to the picket by the same route. At least once every two hours a patrol will move by the farm road to Picket No. 2. Lieutenant A, and the men who are to make the patrol during the night, will go over the route before dark.

Lieutenant B establishes his picket to the right (east) of the railroad due south of the bridge and posts a double sentinel a few yards from the picket. No other sentinel at the picket is required. Three patrols of two men each are detailed to patrol from the picket east to the ravine. A patrol will move back and forth between these two points. He has so far 6 men for sentinels, 6 men for patrols and three non-commissioned officers or privates acting as such—15 men. He has one man left besides himself. He decides to have a patrol to Picket No. 1, going by way of 45 and returning

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by G. This will be made once in two hours without interfering with the patrol to the ravine. It will be made by two men taken from the non-commissioned officers, sentinels not on post, and the extra man. The patrols each go over the route before dark.

Sergeant Y establishes his picket in the mouth of the draw, east of the little railroad bridge, and posts a double sentinel to observe to the northwest along the road and railroad. He detaches a corporal and three men to establish a cossack post about due east of the picket, on the ridge. The rest of his men he holds in readiness for patrolling. Frequent patrols will be made well to the front. The cossack post will be visited about once an hour.

During broad daylight the double sentinels may be made single and much of the patrolling omitted, but from sunset to broad daylight the above dispositions will be followed.

These dispositions require for night work, if there be no attack, six squads and two sergeants for the three pickets; one squad for the detached post. The guard and patrols at the support require nine men and, let us say, two non-commissioned officers. A total of eight squads and one man besides four additional non-commissioned officers or a grand total from Company E of 69 men out of the 128, practically one-eighth of Major A's force.

The major would also have from the main body a small camp guard. Probably a single sentinel would be sufficient or at most two. This would require 3 or 6 privates and one or two non-commissioned officers. This is not excessive, particularly when we consider that full work by these men is only required during darkness.

The next question is: has he economized too much; is there an avenue of approach left open to the enemy?.

If the enemy comes by the wagon road against the front of Picket No. 1, he is met by two squads and this number of

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men shooting down a road would be quite an obstacle. The enemy will be forced to make a deployment and regular advance which will take time, particularly in the dark. Having deployed, the enemy will doubtless be able to push back the men of the picket, but by that time the support can be deployed and ready and Picket No. 2 will soon be on the enemy's flank. By the time the enemy is oriented and in condition to handle his forces he will be met by the support, nearly a company strong, and the main body will be ready to add its fire to that of the support.

If the enemy comes by the roads against either of the other pickets the result is practically the same.

Suppose now that the enemy attacks, moving across country between Picket No. 2 and 49. Crossing the stream with its steep banks will take some time for a force as large as a battalion, and is certain to make considerable noise. One or the other of the two patrols will early detect the movement. After crossing it will take the enemy an appreciable time to overcome the disorder caused by the crossing and to prepare to advance to the attack. Pickets Nos. 1 and 2 will then be ready to open a cross fire on him and are strong enough to cause him trouble and considerable delay. The support, as before, deploys and is ready.

In case the enemy moves south of the Rock Island Railroad to turn the position, he will scarcely attempt to cross the ravine directly in our front, but will turn it, which will bring him in well from the south. The detached post in that vicinity should get early information of such a movement and alarm the main camp. Although the squad could not cause much delay it would cause some, for the enemy must find out how much force there is against him. The distance is sufficiently great so that by the time the enemy was within effective range for night firing our troops would be ready. The outpost company, or part of it, could in that case move against the enemy's right flank during his advance. The enemy would by such a move be running so great a risk that

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unless he were greatly superior to us he would hardly attempt it.

We must remember that a force which has to advance in the dark is much more liable to confusion, disorder and mishap than troops in position.

One other supposition: The enemy might turn south at 25. The cossack post should in that case see him in time to give ample warning. This post could not cause any delay. The southern point of the hill is over 1200 yards from our main body, too far for it to accomplish anything by night firing. However, the enemy's attempt to advance down the steep bank would be considerably interfered with by the support and later his advance would be flanked by Pickets Nos. 1 and 2.

The distance from the main body to the advanced elements of Pickets 2 and 3 is nearly 2000 yards, to Picket No. 1 is only about 1200 yards and to the detached post about the same. This, I believe, fulfills the requirements. Night fire by infantry is effective only at short range. In daylight the enemy would be seen for a considerable distance before he reached the detached post or Picket No. 1.

I do not believe that we can dispense with any of the men we have used. To cut out one of our sentinels or patrols from the pickets would leave the enemy an opening. The patrolling from the support is also considered essential.

This problem is a very simple one and in solution works out rather normally. The pickets are of equal size. This will not be the *rule*. To each picket must be assigned the number of men necessary to do the work before it. One picket may have two or three double sentinels, another only one. In some cases a cossack post or sentry squad would be used. The pickets may vary in size from two squads to a company.

You must also bear in mind that generally there is more than one *correct* solution. Whatever disposition gives the necessary security with the minimum of men is absolutely correct.

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PROBLEM 4—Troop Leading*

A Battalion on Outpost

GETTYSBURG GENERAL MAP

BONEAUVILLE AND NEW OXFORD THREE-INCH SHEETS

Situation:

On September 1st, a detachment of the 1st Blue Division, consisting of the 1st, 2d, 3d and 4th Regiments of Infantry, 1st Squadron, 5th Cavalry, 1st Battalion, 6th Field Artillery, and detachment, Company A, Signal Corps, in hostile territory, is advancing on Gettysburg from the east.

The 1st Infantry constitutes the advance guard; the cavalry is at the front as independent cavalry.

At 4 P. M., as the reserve of the advance guard reaches Noel, General X, commanding, issues the halt order for the night. The 1st Infantry and one-half Troop A, 5th Cavalry are directed to camp at Square Corner and establish the outpost; the remainder of the command is to camp from 1½ miles to 2 miles east of Square Corner.

Based on the order of General X, Colonel B issues the following order:

Field Orders
No. 2

1st Infantry,
Square Corner,
1 Sept. 10, 4-30 P. M.

Troops

a. Support No. 1
Major A
1st Bn.
(less Cos. C and D)
1st Plat. Tr. A, 5th Cav.

1. Our cavalry reports that a force estimated at nearly a brigade of infantry with some cavalry and artillery at about 3-15 P. M. was going into camp about two miles west of HUNTERSTOWN. GETTYS-

*Army School of the Line, Course in Troop Leading, 1910–11, Map Problem No. 2.

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Support No. 2
Capt. C
Co. C
6 Mtd. Scouts.

Support No. 3
Capt. D
Co. D
2d Plat. Tr. A, 5th Cav.

Support No. 4
Lieut. B
1st Plat. Co. E
6 Mtd. Scouts

b. Reserve
1st. Inf. (less 1st Bn. and ½ Co. E)

BURG is reported occupied by a hostile force, strength unknown, but not greater than one brigade of infantry. Our detachment will camp about one and one-half miles east of here.

The remainder of the 1st Division will reach here early tomorrow. Our cavalry is to remain out in front until 7 P. M.

2. This regiment, reinforced by ½ Troop A, 5th Cavalry, will go into camp at this place and establish outpost from crossing 481 on the LITTLE CONEWAGO west to road fork 606, thence to SWEET HOME S. H. and ST. LUKE'S CHURCH.

In case of attack the ridge running from ST. LUKE'S CHURCH a little west of north will be held.

3 **a.** Support No. 1 will take position near orchard in road fork 606 and cover the sector from LITTLE CONEWAGO to include the roadfork 614 on north and south road about ½ mile west of BRUSH RUN. Patrolling toward HUNTERSTOWN will be kept up during the night.

Support No. 2 will take position at roadfork 601 and cover the sector from left of Support No. 1 to include roadfork 606.

Support No. 3 will take position near roadfork 616 and cover the sector from left of Support No. 2 to LITTLES RUN, ½ mile southeast of SWEET HOME S. H. Patrolling toward GETTYSBURG will be kept up during the night.

Support No. 4 will take position in the grove east of ST. LUKE'S CHURCH and cover the sector from LITTLES-RUN to WHITEHALL.

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b. The reserve will camp at SQUARE CORNER.

4. The wagons of the field train will join the organizations to which they belong until 7 P. M., when th y will proceed to the WENTZ farm and park for the night.

5. I will be at SQUARE CORNER.

B,
Colonel.

Verbally to assembled officers of 1st and 2d Battalions; copy by regimental adjutant to Major L, 3d Battalion, which forms the support of the advance guard.

Required:

1. All dispositions and orders of Major A, commanding Support No. 1.

2. The same for picket commanders of Pickets Nos. 1 and 2, Support No. 1.

3. The same for Lieutenant K, commanding the platoon of cavalry.

Note: Assume that this platoon of cavalry consists of a lieutenant and 21 enlisted men and that it reports to Major A at 5.30 p. m., after he reaches his position.

By order of General X a telephone line is laid from Major A's support at 606 to Square Corner and from there back to his own camp.

Information was obtained from Colonel B, as to where he desired the two platoons of cavalry to report, and embodied in General X's order to the cavalry commander.

Solution, 1st Requirement:

Assume that Major A and his battalion are near Square Corner when he receives his order. He sends one mounted orderly to report to Captain C and one to Captain D.

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Major A directs:

Captain D, take your company out of the battalion and proceed.

Captain C: I shall move out on this road running northeast which is also your best route. I shall take precedence, you may follow to the fork in the road or take another route.

Then assembling the officers and sergeants of his two companies he issues the following order:

The enemy is reported to have about a brigade of infantry with some artillery and cavalry at Hunterstown and probably a smaller force at Gettysburg.

The detachment will camp about 1½ miles east of here. The remainder of the 1st Division will be up early tomorrow.

Our regiment will camp here at Square Corner and furnish the outpost extending from the Little Conewago crossing about two miles north of here, thence west across Brush Run, thence south through Sweet Home S. H. and St. Luke's Church towards Whitehall (pointing out on map and ground).

In case we are attacked this ridge in front here will be held.

This battalion (less Companies C and D) and the 1st Platoon, Troop A, 5th Cavalry, will constitute Support No. 1 and will take station in the orchard at road fork 606 (pointing on map) and cover from the crossing of the Little Conewago west to road fork 614 (pointing). In case of attack on our front we must cause delay enough to enable the reserve to get in position.

Lieutenant E, take the leading section of Company A and, as advance guard, move out along this road. When you reach the store at a road fork about a mile and a half from here turn west and halt at 606,

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sending patrols out for at least 500 yards on each of the three roads leading from there to the north and west. Assemble your section in camp as soon as the outpost detachments pass your patrols.

To the Adjutant:

With the mounted orderly move out on this same road to the first branch road leading west; follow the latter for about half a mile to the farm road leading generally north into the road followed by the advance guard. Rejoin the command there.

I will follow the advance guard at 500 yards.

Move out.

On reaching the store Major A halts the command long enough to give the following order to the second lieutenant of Company B:

Take the leading section of Company B, move up this road to the crossing of the Little Conewago and establish a post, a sentry squad, there, and then move west with the remainder of your section to road fork 555 and take station. You will be Picket No. 1. You will observe carefully the road to your north and patrol during the night between your first post and your station.

Your sentry squad at the crossing will subsist by individual cooking of the ration in the haversack the fires must be under cover. The supper for the other two squads will be sent to them.

Major A then continues his march to his station. Having arrived there he halts his command, assembles his remaining officers and sergeants and issues the following verbal order:

This support, No. 1, will camp here in this orchard. Lieutenant B with one section has already taken station as Picket No. 1 and covers from the Little

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Conewago to the roadfork about one-half mile east of here.

Sergeant O, with your section of Company B, move out on this road (pointing to the farm road leading north) to where it joins the main road about one-half mile north of here. You will constitute Picket No. 2. You will patrol continuously the road from your station to the Kohler S. H. and every hour, on the hour, send a patrol to Picket No. 3.

Lieutenant C, with the next section of Company B, you will move out on this road (pointing) to the road fork beyond Brush Run S. H. and constitute Picket No. 3. You will send a patrol to Picket No. 2 every hour, on the hour; you will also send frequent patrols to Cedar Ridge and to the first roadfork on your left.

Lieutenant D, you will take the 2d Platoon of Company A as Picket No. 4 and proceed to roadfork 607. You will cover from Picket No. 3 to 614, connecting with support No. 2. The latter is posted on crossroads 601.

Company commanders will see that cooked rations are sent from here to the pickets from their companies, except to the left squad of Picket No. 1.

Troops not on picket duty will camp in this orchard, Company A on the left. The company wagon will leave this camp by 7 P. M., and proceed through Square Corner to the Wentz farm. Move out.

To the adjutant:

From the troops remaining here detail a non-commissioned officer and nine privates for camp guard and twelve non-commissioned officers and privates for patrol duty and an officer of the day. Have the latter report to me at once.

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To the officer of the day—Captain B:

> You will have the camp guard posted, one sentinel at the intersection of the roads, the other two in the roads at the corners of this orchard. Only the first need be posted until dark.
>
> Twelve men will be detailed for patrol duty, three reliefs for two patrols of two men each.
>
> Patrol No. 1 will start from here and proceed to the Little Conewago crossing where the sentry squad from Picket No. 1 is posted, then back here and out to Brush Run S. H. and return. A patrol over this route should leave here every hour from dark to daylight. The other patrol will move out this farm road to Picket No. 2, thence southwest on the road to Picket No. 4 and back to camp. A patrol on this route should leave here every hour.

Lieutenant K, commanding the platoon of cavalry, having reported, Major A explains to him on the map the outpost dispositions and gives him the following order:

> At 7 P. M. you will proceed to cross roads 573 east of Guldens. I want your platoon to observe the York Turnpike and the roads leading from Hunterstown in this general direction between Granite Hill and Brush Run. At daylight have the whole platoon out and gain contact with the enemy. Feed and water your horses now and have your men get supper. There is no objection to your unsaddling while here.

Major A then informs the officer of the day that he is going to inspect the line and, taking his adjutant and a mounted orderly, he proceeds to inspect his entire line and the dispositions of each picket. He has a tracing from his map on which the adjutant places the troops as they are found and approved by the major.

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After completing his circuit of the pickets the following report is written and sent to regimental headquarters by the mounted orderly:

Support No. 1,
Crossroads 606,
1st Sept. 10, 7 P. M.

To Adjutant, 1st Inf.,
Square Corner:

Enclosed find sketch showing dispositions of Support No. 1 of the outpost. It gives location of each fraction of my command, sentinels, and routes to be taken by patrols during the night. Nothing has been seen of the enemy.

A,
Major, 1st Inf.,
Comdg. Support No. 1.

2d Requirement:

(a) Picket No. 1.

Lieutenant B on receiving his orders from Major A takes command of his section and gives the following orders:

Corporal Z, take the leading three men as advance guard, move out on this road to the creek crossing about half a mile from here. Halt when you reach the bridge. I will follow at 200 yards. Move out.

On reaching the crossing:

Corporal Z, with your squad remain here as sentry squad; you are the right of Picket No. 1, Support No. 1. You will keep a double sentinel on from dark until daylight and a single sentinel the rest of the time. Have one of your sentinels at the bridge, the other at the road fork. Use your other two men to make occasional patrols and every two hours, beginning at 8 P. M., patrol to the picket. The picket will be located

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at the roadfork about half a mile west of here. Patrols to your post will be made during the night. You will subsist from the contents of your haversacks. Conceal your fires.

He then marches with his remaining two squads to his station. Having arrived there, the men in line, the nine privates on the right are cut off as sentinels for the night, three reliefs of three men each, No. 1 to be posted at the junction of the roads, Nos. 2 and 3 as a double sentinel post at the first bend of the road to the north, only No. 1 being posted until dark. One corporal and the remaining five privates are in the same manner divided into reliefs for patrol duty. The sergeant and the remaining corporal remain at the station of the picket.

Before breaking ranks the lieutenant gives this order:

This is Picket No. 1, Support No. 1. The reserve is in camp at Square Corner where we left it; the main body east of that place. Support No. 1, to which we belong, is a half mile west of here on this same road.

Hunterstown, about five miles northwest of here (pointing), is occupied by the enemy.

Men not on post will remain in this corner of the woods.

To the sergeant and corporal with the picket:

I will take charge until 11 P. M., the corporal from then until 2 A. M., the sergeant until morning. In case a special patrol is required during the night two of us three will make it, the other remaining in charge.

At 7 P. M. the first patrol will go from here to the right sentry squad and back, then out this road leading north to the crossroads at Kohler S. H. about a mile from here. This will be repeated each two hours until 5 A. M.

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(b) Picket No. 2.

Sergeant O, after receiving his orders from the major, orders:

> Corporal K, take three men of your squad and move out this road (pointing) to the road crossing about half a mile from here; I will follow with the rest of the section at two hundred yards. Move out.

Having arrived at the cross roads, and the advance guard having reconnoitered the forest near by, a sentinel is placed on the road at the top of the ridge to the southwest. Sergeant O then forms his section in line, falls out the corporals, and tells off the first nine men as sentinels (three reliefs of three men each). The remaining nine privates and one of the corporals are divided into five patrols of two men each.

He then gives the following instructions:

> This is Picket No. 2, Support No. 1. The support camps where we left it just now, about half a mile south of here. The reserve camps at Square Corner where we left it; the main body east of there. The enemy is in Hunterstown, about five or six miles in that direction (pointing).
>
> Picket No. 1 is about a half a mile east of the support on the same road, Picket No. 3 is at the cross-roads near Brush Run S. H. about half a mile southwest of here on this road.
>
> The men of this picket not on duty will remain together in the woods just opposite the end of that road leading north.
>
> Sentinel No. 1 will be posted at the picket, Nos. 2 and 3 as a double sentinel about 150 yards north on the farm road.

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Patrols 1, 2 and 3 are assigned to patrol continuously the road from here to Kohler S. H. about half a mile to the east; they will walk two hours on, four off.

Patrols 4 and 5 will alternate starting on the hour, will patrol to Picket No. 3 and return, then north to the first cross road and return.

I will take charge the first half of the night, Corporal X the other half.

3d Requirement:

Lieutenant K, having watered his horses in Brush Run on his way to report, moves into the orchard, dismounts and unsaddles, orders that the horses be given an opportunity to roll, then fed and groomed; forage to be taken from the barns. The men then get their own supper and, just before 7 P. M., saddle. At 7 P. M. the lieutenant moves out with his platoon. Having arrived near the crossroads he selects a good position under cover of the trees just off the road where his party will be fairly well concealed from view and places it there.

As they have been out during the afternoon, his men know the situation and the location of the enemy.

He now divides his men into three reliefs of seven men each. Each relief is divided into three patrols of two men each and one of one man.

Then he gives the following orders:

Patrols will be standing. Patrol No. 1 will be at crossroads 506. To reach your station go east on this road (pointing) about three-fourths of a mile to the second road turning north, move north on that road about one-half mile to the crossroads, and observe carefully the roads joining there.

Patrol No. 2 will move out this road (pointing to road running northwest) for half a mile to the road-

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fork and take position there, observing carefully the roads joining there.

Patrol No. 3 will move out this road (pointing to the one running southwest) for about a mile and a quarter and take position there where you can observe the roads meeting there.

Patrol No. 4 (the single man) will move out this road (pointing to the one running east) to where the farm road comes into it from the north, about half a mile from here. He will remain there and watch the farm road.

The patrols will be relieved each two hours.

Horses will not be unsaddled, unbridled nor tied.

To the sergeant:

Designate the men of the reliefs, not on post, to be sentinel over the platoon; one on duty at a time.

The lieutenant then himself posts Patrols Nos. 1 and 4 and visits the other two and sees that they are in the right places and understand their orders.

The second relief patrols are sent out to post themselves.

At the first sign of day patrols are sent out to feel the hostile outpost line and to try to get around its flanks and learn everything possible of the enemy's movements.

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PART III

HANDLING THE BRIGADE

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HANDLING THE BRIGADE

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INFANTRY TACTICS*

IN this lecture on the subject of Infantry Tactics, I shall not attempt either a connected discussion or a scientific treatment of the subject.

My experience has impressed upon me the conviction that many men tend toward certain tactical evils, "even as the sparks to fly upward."

There are many important points in tactics to which we have not given proper thought and others for which we have accepted a prescribed form and concerning which we have not thought at all.

I shall first deal with some of the problems involved in the actual combat; then with the planning of the attack or defense.

Importance of Tactics

Tactics is the important branch of our profession. From the corporal up, all must apply it in war; yet it is harder to obtain exact information on this subject than on most others. Grand strategy is more fully written up; yet those who will have to maneuver large armies are few and those who need to apply tactics are many.

Normal Formations

The tactics to be applied in any particular case is influenced by innumerable circumstances varying with each case. Formations and methods must be adapted to the terrain, to the object to be accomplished, the arms used, the enemy, the quality of our own troops and the support to be expected from others, and sometimes will even be affected by political conditions. It should be apparent, then, that fixed forms, normal formations, and, above all, cast-iron rules, can have but a limited application in tactics. Yet there exist certain fundamental principles and ideas which should govern although their application must vary.

*Lecture to the Army School of the Line, in 1908.

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How, then, is tactics to be taught? My answer would be: In the same way as the common law: by the study of precedents; yet still more by practice in applying the fundamental principles of tactics to concrete cases; by the drilling of the mind to work in the right channel, to think of all the conditions that surround the problem and to do it quickly; and, above all, by bringing good common sense to bear.

Methods of Instruction

Our profession is one of the oldest and is, like so much in the world, the result of evolution. Many theories have been tried and found impracticable; others have been tried under varying conditions and always found sound, so that we can almost adopt them as fundamental principles of the art. Many others come in between these two classes. The experience of others, their failures as well as their successes, should furnish us with valuable guides in our work. Thus a careful study of recent wars must be a very great aid in the study of tactics.

As previously stated, however, tactics, in each instance, is influenced by conditions and circumstances, and caution must therefore be used in accepting too unqualifiedly the methods employed in any one campaign, no matter how successful they may have been. We must always look at the surrounding conditions and see how they influenced formations and results. Every war has had conditions peculiar to itself and, where formations were appropriate only to these conditions, they must not be applied where such conditions do not exist. There is another point to be made in this connection: we must be sure that the reports we read are correct. During and soon after every war alleged facts are taken up by the press and unreliable authors and on a slender basis of fact, a great fiction is woven. For example, during and after the war in Manchuria a careless student of our profession might have been led to believe that battles were won practically with the bayonet; yet the cold facts were that the Japanese loss from bayonet and sabre was

Military History

Fallacies and Facts

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about ½ per cent and the Russian about 1 per cent of all casualties. There was no more truth in many other stories relating to this war, for instance in those concerning the sanitary methods employed.

As a result of the Boer War we were solemnly told that the day of the frontal attack was past; that English losses were annihilating; that very thin lines only could be used, as thin even as one man to 15 yards. All these were half-baked opinions based on insufficient information. The next war showed their erroneousness as regards the frontal attack. The English themselves proved the fallacy of too great extension. As to the losses suffered by the British in the Boer War, they were, when reduced to figures and percentages, by no means appalling and, compared with losses in our own Civil War, were almost insignificant.

Human Elements

In our study we must bear in mind the instrument we are working with. Too many writers who treat of military subjects have no conception of this vital point. A fighting force is a collection of men, each with his own individuality and with all the peculiarities and incomprehensibilities of the human mind. In dealing with inanimate things we can figure out what they will stand, what can be done with them, illustrate it with mechanical drawings, make hard and fast rules. Can we do this with men? Can we tell why a regiment breaks today with a loss of less than 6 per cent and tomorrow deliberately and coolly stands a loss of 30 per cent without breaking? Can we foretell with certainty the effect of any unexpected event upon a body of men? I think not. In spite of this, if a man knows men as he should, he can do much toward preventing bad breaks; he can get out of the men the best that is in them; he can be a leader.

The first and most important thing, then, for the commander of troops to know is the soldier; to know him as thoroughly as it is possible to know him; to get his point of view. When a commander has done this he will have

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mastered a large part of his profession and the hardest part to learn. Many a man who has known the literature of the military profession, who has taught and written it, has been a lamentable failure as a commander in the field because he had never learned to know men.

Inflicting and Enduring Losses

The next question to consider is: What is it that gives victory? and the answer may be made: inflicting on the enemy a loss beyond which he will not stand. This loss varies with the quality of the troops, their physical condition at the time, the spirit of the men, their leaders, the time in which the loss is administered, and according to whether the troops have been on the offensive or defensive, etc. History contains instances of troops who broke more because they had been turned out on a cold morning without breakfast than on account of the enemy's fire. The suddenness with which the loss is inflicted also makes a wonderful difference.

On the offensive the men are active, they are moving and can endure more than those standing on the defensive; above all they leave their dead and wounded comrades behind so that the sights and sounds of suffering do not affect their nerves as they do those of men on the defensive.

Breaking Point

Some competent writers say that only good troops will stand a 10 per cent loss and that only the best will face a 25 per cent loss without breaking. These figures may or may not be a fair statement, but the fact remains that every body of troops, like every piece of wood, has its breaking point. If we can force the enemy's losses to his breaking point before he can do the same to us we win.

"Weapons improve but human nature remains the same." It takes no more, if as much, killing to break a body of troops today than fifty years ago.

Do not confuse losses in battle with the breaking point. In the majority of cases the losses after the break exceed those preceding it.

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If we could do as good shooting on the battlefield as on the target range the breaking loss would soon be obtained. Unfortunately we cannot even approximate it. This decline in our shooting ability is due to many causes: poor targets, unknown ranges, the fatigue and excitement of the men, but above all to the effect of the enemy's fire on the nerves of the men, an effect which does not at all necessarily imply cowardice.

Losses in Battle

In the Turko-Russian War in 1877–8 the Turks had a longer range gun than the Russians so that the Russians had to advance under fire for some distance before they could return it. It was found that their losses were much heavier at this long range than at the shorter range where the Turks were themselves subjected to fire. The same was true in the Franco-German War where the Germans had the shorter range rifle and suffered heavier loss at long range than after they themselves opened fire.

Effect of Returned Fire

It is well known that the losses among troops withdrawing is generally much heavier than among those advancing. What the effect of return fire should be rated at, it is hard to say. Some have claimed that it reduces effectiveness to from 1/40 to 1/70 of what it was before, if the return fire be heavy and well-placed. The heavier and better-placed our fire, then, the poorer will be the markmanship of our enemy. In this lies our chance to advance against an enemy.

Much has been written as to the relative advantages of the defensive and offensive. There is no doubt that the defensive locally should be the stronger, but the proposition is, I think, often exaggerated. The offensive has many advantages, two of which I have already mentioned: it is the active party, it leaves its dead and wounded behind. But its greatest advantage is its choice of line of action: the defense must follow suit to the other's lead. No one can say what preponderance of force the offensive must have, for it will vary

Offensive vs. Defensive

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with many conditions; but, in dealing with this question the tendency, as a rule, is, I believe, to overrate the advantages of the defensive.

The Offensive

The fact, then, that you have assumed the offensive presupposes superiority of some kind, either in numbers, training, morale, arms, or in all or many of them. To win you must, as a rule, overpower the enemy's fire with your own. You must, therefore, other things being equal, bring more rifles into play than he does. Hence, whatever formation you adopt, it should be such as to provide a heavy firing line from the time you open fire until the fight is over. Men must be at hand to repair all losses and to maintain your strength to the end, to provide additional men for the final assault and others to cover the reformation of your disordered lines and to take up the pursuit, if successful, or to cover your withdrawal, if defeated.

Not only must losses from casualties be met, but also losses from falling out; for as your line advances, men will be left behind and the number of these will generally exceed that of your killed and wounded. Your casualty list will, therefore, not express the full number of men to be replaced and, hence, at those points where a frontal attack must be pushed home, your strength must be correspondingly great.

Frontal Attacks

Since these frontal attacks are costly, and since the breaking of your line at a few places, sometimes even at only one, means victory for the other side, the attack must not be pushed in this manner on the whole of a long line. Errors in judgment in making these frontal attacks are very expensive; yet recent wars have shown that success in such attacks is by no means impossible if they are properly made, with good troops, at suitably selected points; nor are the losses entailed prohibitive.

Frontal attacks must be made if war is made. All that can be said is: avoid them if you can win without them; but be prepared to make them. When a frontal attack must be made, the point at which it is to be pushed to

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the bitter end must be one which, when attained, will be decisive. Do not waste your energies upon points of no value. If you do not want the enemy's entire strength concentrated against the points of real attack you must keep him in doubt as to where you will push the attack home; therefore, the difference in your formation on the various parts of the line must be back of the first line and where the enemy can not see it.

Points of Real Attack

On the defensive one should have a strong firing line. The ammunition supply being comparatively easy, all the ammunition that will produce results should be fired. As long as the defense is subjected to no fire or to a feeble one the men will not be rattled and can fire with care and should, even at long range, produce good results. Remember that a man can get better results at long range, if he is cool and steady, than the same man can get at shorter range when he is excited and scared. A man's long range firing, when he looks where he is shooting, will be better than his fire at shorter ranges when his head is down and only his rifle is above the parapet. All the men will not get excited and duck; but those who do always form a considerable proportion. For the same reasons the perfectly cool and excessively brave among the enemy must be killed or discouraged, and they are the easiest to kill because the most exposed.

On the Defensive

On the defensive you can constantly replace losses while the enemy must reach his limit. If inferior to you his line must become more weakly held or much shorter. In the first event he ceases to replace losses and you overwhelm him; in the second you overlap him and you will not have to break through.

Remember that your casualties decrease from the effectiveness of your own fire and for two reasons: there will be less rifles opposed to you, and those that are left will be less effective in proportion to the effectiveness of your own fire.

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If the above be correct, then, is not a thin firing line in the attack a mistake? There were those who after the Boer War advocated extension to even 15 paces. What could this accomplish against a well placed defensive line?

Opening Fire in Attacking

In the attack fire should not be opened until needed to protect your own line from excessive loss or to keep the men from losing heart; for you have not the advantage of the abundance of ammunition possessed by the defense. After your present supply is gone darkness or the end of the battle may be necessary to enable you to get more. In the attack your long range firing will be of little effect. Your ammunition will be more valuable later on. When you do open fire, make it effective if possible.

As to the time of opening fire in an attack, it is largely a matter of good judgment. If you open too soon, your fire has little effect against men behind cover and you accustom them to the sound of your bullets while not inflicting casualties enough to make the sound very unpleasant. Also if you openfire too soon you unnecessarily delay your advance, and the more steadily you advance the more you discourage your enemy. Disregarding the hostile fire and keeping right on seems to show a contempt for the enemy's fire which tends to dishearten him.

All these psychological points have been extensively discussed by many able writers and are worthy of our consideration. The most important point to bear in mind, however, is that we must not exhaust our ammunition too soon, remembering that to get a fresh supply to a firing line anywhere near the enemy, in broad daylight, is, except on favoring terrain, practically impossible.

It would appear then, that, as a rule, it is better to put off opening fire until well forward; but it should not be delayed so long that the men lose heart, nor after coming within effective firing range.

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As to the number of cartridges to be fired at each halt, each case will have its own solution. Bear in mind the object you have in view. You must reach the enemy's position. If, at your first halt, the enemy's fire is having little effect and your own fire is principally to encourage your men, a very few rounds will suffice. If, on the other hand, his fire is so effective that it is practically impossible for men to face it, you must subdue it; you must shoot his fire down. Even with a heavy firing line you may have to fire many cartridges before the hostile fire is sufficiently subdued to permit your line to advance. To accomplish this may require one round per man, o thirty. Whatever is required should be used; but, once the desired result is obtained, no more should be expended at that halt. There are cases, then, when instead of firing one shot at the first halt and an increasing number as you advance, the reverse may be desirable, many shots being required at the first halt and a smaller number later on. The point to bear in mind is that your object is to get to the enemy with the least possible loss of time and men, which means that you must subdue the enemy's fire whenev r it becomes too deadly for urther advance. If a few shots will do it, do not fire more. If needful, fire many; if necessary, nearly all that you have, and, when darkness or favoring terrain enables you to get up a fresh supply, then go on. If the advance was justified in the first place it will seldom reach this last extreme.

Cartridges to be Fired

The two last wars have shown in many instances that to turn your back on the enemy, when close in, and try to walk or run to the rear is more costly than to advance. Your enemy knows then that you are worse off than he is. No longer suffering loss from your fire, he gains courage accordingly, his shooting improves and your losses increase. Once you have pushed well up to the front it is cheaper and better, if you cannot go farther, to get cover and stay there to await reinforcements or darkness. This has repeatedly been shown in the last two great wars.

Turning Back

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In this way a fight may last for days, since darkness can cover the bringing up of ammunition and reinforcements and a new impetus can thus be given to the attack. In going back you give up every thing you have gained, you increase your losses and decrease your morale.

Rules Impossible for the Attack

Some writers are fond of giving exact figures and prescribing rules for the attack. According to them you advance just so many yards; you fire just so many shots; then advance just so many more yards; etc. Cast iron rules cannot be given in tactics. One very good rule in the Japanese Drill Regulations says: "All fixed formations for attack are prohibited. At drill the same formation and method will not be used twice in the same day." We must try to understand the underlying principles of the art of war and then apply them to the concrete case in hand so as to get the best results.

Reinforcing the Line

As your line advances it will, in most cases, need reinforcing before the fight is over and, generally, will need it repeatedly. Here again comes in an opportunity to display sound tactical judgment. If you have started out with a good strong line, as long as it is making good progress, you need not reinforce, for if you fritter away your reserve strength you will have nothing with which to encourage your line and carry it forward when the real strain comes. Remember your object is "to get there" and if your line is moving right along it needs no help.

When you do put in reinforcements put in enough to be felt. If your line becomes stalled, and either will not or cannot go farther, another and fresh line thrown in will usually start it again, provided that the fresh men come up in a body. If they are dribbled in by ones or twos they produce little moral effect and it is this moral effect on the first line that you need. You must give the line a new impetus forward and this impetus must be given before the line has lost all its momentum. It is easier to keep a car moving than to start one from rest.

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As regards the great danger, which some of our own people see as resulting from the intermingling of different units in battle, I fail to appreciate it. The history of all recent wars shows that it must occur. There is a real danger, however, in constantly drilling our men so as to avoid it. When the stress of battle comes, our beautiful peace formations will fail and the moral effect on the men in the first battle will be serious. As long as conditions are such that men can be maneuvered as so many now maneuver them on the drill ground, and as called for by our regulations,* reinforcements are unnecessary. When they become necessary, they will have to go in as best they can, and intermingling must occur. Men ought to be drilled, therefore, as nearly as possible so as to accustom them to conditions as they will find them in war. Then they will not lose confidence in themselves and their officers when the mixup occurs. The drill will not be so pretty; but it will be much more practical.

Mixing Units

In reinforcing the firing line comparatively thin lines will be pushed forward in turn. These must advance as did the firing line and, if possible, carry it forward on joining. While these reinforcing lines will be thinner than the original firing line they should, nevertheless, be heavy enough to produce a decided effect, both moral and physical. Their mission is to sweep the firing line forward with them.

Whenever brought to a standstill, where it must remain for some time, and not till then, the firing line should intrench. The supporting troops in rear, if under fire, must get cover either natural or artificial.

Rushes by alternating fractions of the line should be postponed as long as possible; but the time soon comes when, in order to advance without too heavy a loss, the enemy must, figuratively speaking, be kept dodging. This means that, while part of the line advances, the enemy must be subjected to an effective fire from the rest. Even in such cases the advancing

Rushes by Fractions

*Infantry Drill Regulations of 1904 are here referred to.—*Ed.*

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echelons must be as large as possible; but, as the line draws nearer to the enemy, it will become necessary for more than half the line to fire in order to make the fire sufficiently effective to cover the advance of the other and smaller portion. This preponderance of the number firing over the number rushing must generally, though not always, be increased as the enemy is approached until, eventually, only one man at a time may be advancing. It must be strongly borne in mind that there is no advantage in this system of advance unless the rush of each portion of the line is actually made under cover of heavy fire. If the portion not rushing fires three, or any other number, of cartridges, either just before or just after the rush no advantage is gained and time is lost. In order to get the benefit of the formation it is absolutely essential that the forward rush be made while the fire is at the hottest.

The above would suggest that we ought to adopt a different method of rushes from our present one.* The right or left element of each attacking unit should advance, followed in turn by the others, the rear element coming abreast of the leading one but not passing it.

Example of Method

By this method, in the case, for instance, of a battalion with two companies deployed to make an attack, your advance will at first be by the entire line which will, from time to time, halt to shoot down the enemy's fire and then advance again. But, as the enemy's fire becomes too heavy to advance under, the right company will, as soon as it ceases firing, rush forward while the left keeps up a heavy fire; then the left company will in turn advance to the line of the right under the protection of the fire of the latter. As the stress increases the line will advance only one platoon at a time, and in turn, while the others fire; still later the advancing fraction will become still smaller, and so on, until eventually in extreme cases, one

*Method prescribed in I. D. R. of 1904 is, of course, here meant. —*Ed.*

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man only may rush forward at a time while all the rest of the line keeps the enemy under cover.

Now let us deal briefly with plans of action.

Major Squier, Signal Corps, in a lecture published in the *Cavalry Journal* for July, 1906, gives nine general rules for football as set forth by one of the greatest authorities on the game. The last three are as follows:

Plans of Action

7. It is a fundamental rule that every play must be as simple in execution as possible.

8. The plays should be so chosen by the team captain that every play is a surprise and is strong enough to prevent loss of ground if the surprise fails.

9. In the selection of plays every play is discarded in which each man does not have a definite part to perform.

These rules are also fundamental rules in tactics. Let us consider the first of the three in connection with our subject:

Plan must be Simple

"It is a fundamental rule that every play must be as simple in execution as possible." By substituting the word "plan" for "play" we have a rule of tactics that is indeed basic.

On the field, in the heat and excitement of battle, little maneuvering can be done, and, the attack once launched, about all that is possible is to let it take its course, while influencing it by the judicious use of reserves. It is wisely said that, under modern conditions, a line once thoroughly committed to the attack has but three things it can do: push forward, halt, or retreat. In fact, the attack once launched, higher control is limited and everything depends upon the immediate personal leadership of commanders of units on the line, on the judicious use of reserves and, above all, on whether the attack was wisely and properly planned and started; for it is difficult to make any change after a line is once committed to the action.

A complicated plan has a poor chance even in peace maneuvers. In war it has none. In making your plan of

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action, therefore, try to imagine what the conditions will be when your line is subjected to a heavy fire from modern arms, and then ask yourself: can I count certainly on this being done? If you cannot answer, yes, then look for some other plan. To accomplish any object that plan should be adopted which is simplest in execution. Failure to do this is generally an error and a serious one.

Napoleon said: "All complicated maneuvers should be avoided. Simplicity is the primary condition of all good maneuvers."

Elements of Surprise and Strength

The next rule to make every play "a surprise and strong enough to prevent loss of ground if the surprise fails," is also an excellent rule of tactics.

It will not, of course, be always possible to make your attack a surprise, yet you can often make some part of it an unexpected move. If your attack be sound in its conception, the more it partakes of the nature of a surprise the more valuable it will be. It was held by Napoleon that a general could be excusable for a defeat but never for being surprised, using the word, however, in a broader and more general sense than we have given it above.

You should endeavor so to form your plan of action that if it fails you will not be hopelessly compromised. Many a plan of battle can be drawn so brilliant and daring in its conception that its success would be productive of great results, yet the failure of which would bring ruin and disaster to its originator's cause. Therefore, so arrange your plans that if they succeed they will bring to your own side the greatest possible benefit while if they fail their failure will result in the least possible loss.

The foregoing is not intended to inculcate the playing of a timid game, for cases arise when great chances must be taken, when everything must be risked on one throw; but such cases must be considered as exceptions and the taking of such chances must be justified by conditions. Remember

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always that in actual warfare the lives of brave men, often even the honor and welfare of your country, are in your hands, and that you cannot afford to take the chances that you might when merely "playing for fun."

A Mission for each Arm

Our third rule says, "every play is discarded in which each man does not have a definite part to perform," and is especially applicable to tactics. Bear it particularly in mind when you come to using the "three arms combined." Give them all something to do and give each its legitimate work; for each arm is capable of doing something better than either of the others can do it. Even in the matter of terrain, for instance, one arm can use one part of it to much better advantage than could another. All these things must be considered in solving a tactical problem whether in war or as an exercise.

I now wish to call your attention to a few more points which are worthy of careful consideration.

Dispersion

Keep your men well in hand and avoid all unnecessary dispersion. My experience has shown me that violation of this principle is the favorite tactical sin at our maneuvers and of the student officer.

Clausewitz, in his great work "On War" says, "If the concentration of the whole force is acknowledged as the normal formation and every division and separation as an exception which must be justified, then not only will that folly be completely avoided, but also many an erroneous ground for separating troops will be barred admission."*

The new German Regulations contain the following: "Only in rare cases are the preparation and occupation of advanced positions commendable."

Lincoln wrote Hooker: "Fight the next battle with your whole army." The advice was not followed and you know the result. Many other quotations could be cited on this subject.

*Book III, Chapter XI.

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This rule of concentration is not, of course, without exceptions and there will come cases when separation and more or less dispersion will be correct, but, as Clausewitz says, "they must be justified." When you are planning to separate your forces before a battle ask yourself this question: Is this dispersion necessary to the accomplishment of my object, and is the object such as to warrant the risk? If the answer is not unqualifiedly in the affirmative your solution is wrong. Once separation is determined on, bear in mind the maxim: detachments before a battle must be as small as possible.

Separation will more often occur in large forces than in small ones, but undue dispersion is too common among all. Separation will be more often justifiable in the case of large bodies, from which a division or a corps can be detached, than in the case of smaller ones obliged to detach a correspondingly weaker fraction. In fact, the smaller the force the less justifiable is either dispersion or separation.

Frontal and Flank Attacks

Too many accept too literally the rule to combine a flank with a frontal attack. This leads them to detach a part of the force in order to make the flank attack so that even in comparatively small forces the distance separating the two parts is a considerable one. This is so seldom a justifiable measure as to be almost susceptible of universal condemnation.

In separations you run the risk of the isolated parts being overwhelmed in turn by a concentrated enemy; there is difficulty in securing team play and in coördinating your efforts and, particularly in small commands, control is lost.

Reserves

I have touched somewhat on thin lines and their fallacy. Here the matter comes up again in a different form. Not only must our first or firing line not be too thin but it must not be so long that it will lack ample reserve force behind it.

Generally speaking, the number of men to the yard of front increases, though not uniformly, with the size of the

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command up to an army corps. In a large command on the offensive against a worthy foe, there should be from 8 to 12 men to the yard. On the defensive the number may be slightly weaker.

Frontages

The front of a U. S. division acting alone on the offensive will vary from 1000 to 2000 yards. In a corps, or larger army, it will seldom extend beyond 2500 yards if the deployment is well made, but may extend to 3500 yards, or even more, and be supported by another division. Though this should seldom occur there are times when such a deployment may be forced upon a commander. The division is the grand tactical unit and mixing divisions should be avoided. In bodies of troops smaller than a division the extension may be considerably increased so that from a regiment up to a brigade the line may have as few as from 3 to 6 men to the yard. In minor combats it may be still weaker.

Historical Examples

At the battle of Liao Yang, on the Japanese left, during the first stage of the fight, General Oku with about 70,000 men occupied a front of between 6000 and 7000 yards. He could extend more than normally for he had no fear of a counter attack. At Nanshan the Japanese force was about 50,000 men, their ront only about 4000 yards. At Tellisu the line was still denser. In the Franco-German War, in the fighting about Metz, on August 18th, on the front extending from south of Gravelotte to north and east of St. Privat, about 16,000 yards, there were 7 corps all day and part of the time 8 corps. Other illustrations could be given but are unnecessary.

To most of you this is old; yet I find some who have read these campaigns without noticing such facts and who have very erroneous ideas as to the extension of a division.

Need for Depth

For all that has been said in the foregoing pages on this matter there is a reason. We have already spoken of having to feed the firing line constantly. In addition we must have troops for the final assault; we must have troops to cover the reformation of our lines; to pursue the defeated enemy or to cover our own withdrawal;

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but, above all, we must have men to meet unexpected developments, to extend our line, to meet flank attacks, etc. These men, however, are not to be kept out but should at some time get into action.

Varying Conditions

On the defense you will, possibly, not need so many men for your first line, but you must provide well for meeting flank attacks and for men to make counter attacks, or to cover your withdrawal if forced back.

Small bodies of troops can be moved more expeditiously and emergencies can be met without such strong reserves. A company acting alone could, in extreme cases, be all put on the firing line at once, with a rallying point given the men somewhere, in case they are broken or forced back in rout. Reassembling them would be a small matter. It is different with a division. If it goes to pieces it is lost for a long time.

That the commander should have the troops in hand as far as practicable, and that all unnecessary disorganization of units is to be avoided, are such self-evident statements that they need no proof. Though disorganization must occur, and that often, it should nevertheless be our study to have it occur as seldom as possible.

Night Attacks

Here it seems to me appropriate to call attention to two points which are in a way germane to what we have been saying. The first of these is the question of night attacks. These have generally been looked upon with disfavor by all our best writers; yet history has many instances of most brilliant results from night attacks. Still, they are dangerous experiments and more of them have failed than have succeeded. Confusion, loss of control, and then defeat, have too often been the result. South African terrain, on the other hand, lent itself to night attacks, for the Kopjes rising out of the plain over which the troops could move, made the keeping of the direction of march comparatively easy. This was, to a great extent, also true of the terrain in Manchuria.

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We are aware that after this last great war there was much talk of night attacks and many were misled by it into believing that these have solved the problem of attack under modern conditions. It is a mistake; for the disadvantages of night attacks are still with us and are as great as ever. Though peculiar conditions may make them suitable, it is only under such exceptional circumstances that it is advisable to try them.

Forest Fighting

For this same reason, whenever practicable, avoid delivering an attack through timber with dense undergrowth, if you must come out into the open some distance in front of the enemy. For in your passage through the timber you will lose control of your men; many will not come out at all; and those who do will be disorganized. Experience seems to show that even a much longer approach, if in the open, gives better chances of success and, in the end, smaller losses.

The Mission

The second point of which I wish to speak comes under the subject of the estimate of the situation: your object or mission. Determine this the first thing. Your object is not always to fight. You may be able to gain more by not fighting. On the defensive this question is one of great importance. In selecting your position you must know what is your mission. Are you to hold on to the bitter end, sacrificing if necessary your entire command, to gain time for somebody else? Or are you to do the best you can and then withdraw? If the latter you must so place your command as to be able to get away; while in the former case you would sacrifice nothing of advan age merely to secure a line of retreat. Other points will arise in the same manner and can only be solved by knowing your mission.

Caution and Reconnaissance

Do not be in too great a hurry to commit your command to a definite line of action. Remember that a change is extremely difficult to make once you are really engaged.

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Always make a careful reconnaissance and use every means to know your enemy's location, strength and disposition. In spite, however, of having done all that you can do, you will often be very uncertain on these points. You will have to draw your conclusions from what you know and then act; but, if practicable, you must be prepared to meet unexpected moves.

This must not be construed as advising hesitancy or failure to act vigorously and promptly. Vigorous and prompt action, even if the best plan is not chosen, will generally give better results than a better plan hesitatingly carried out.

Vigorous Action

"There are two things that should be avoided above all by military commanders: inaction and hesitation. To act resolutely, even in an erroneous manner, is better than to remain inactive and irresolute. These latter cannot fail to place the troops in a more dangerous situation than the vigorous execution of a faulty plan."—Japanese F. S. R.

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PROBLEM 1*

In an Attack

FORT LEAVENWORTH TWO-INCH MAP

Situation:

A Blue force, operating in friendly country, is 20 miles north of St. Joseph. A Red force is about 40 miles east of Platte City.

The Blue commander, having heard that a small force of the enemy is approaching the Platte River at Platte City and raiding the surrounding country sends General A, with a detachment consisting of his brigade of infantry (1st, 2d, and 3d Regiments), 4th Regiment of Cavalry (less 3d Squadron) 5th Regiment Field Artillery, Company A, 1st Battalion Engineers, an ambulance section, and a signal corps detachment, to keep the enemy east of the Platte River.

At 9.30 A. M., September 1st, General A, who is with the support of the infantry advance guard, reaches Weston; his cavalry is in advance.

At this time he receives the following information:

A Mr. Spinner, who lives a short distance southeast of G, states that the Fort Leavenworth Bridge and all bridges over the Platte River south of Platte City have been destroyed; that at 6 o'clock this morning a force of about 700 or 800 cavalry, about as many infantry, and 8 field guns with their

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*Army School of the Line, 1907-8, Course in Tactics—Part III, Map Problem No. 7, known as the "Spinner Hearsay Problem" from a controversy which arose among the students as to whether or not General A was warranted in placing so much dependence on the hearsay evidence of Mr. Spinner.—*Ed.*

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caissons, had passed his place and had marched toward the Terminal Bridge; that he heard some of the men say that they were going to Lansing; that at 9.10 he saw what he thought was about 200 or 300 infantry soldiers with 5 or 6 pack mules, approaching his place along the road E—G, and that he then mounted his horse and rode as fast as he could to Weston.

The postmaster at Platte City reports that at about 4 o'clock the afternoon before, a Red force which he estimated at 3000 infantry, 1500 cavalry, and a regiment of artillery, arrived at Platte City and, except for a part of the cavalry, camped around the town; that the part of the cavalry which did not camp there crossed the river and was scattered round on the west side. He had escaped from the town at dark and had come to Weston.

Colonel B, of the cavalry, reports that, at 8.30 A. M., he struck a force of the enemy's cavalry near 17, defeated it and drove part of it toward D and part toward 13; that he estimates the enemy's strength at about a squadron; that the enemy's cavalry patrols were also encountered by his men near 49, and at Harris north of 15. This message was delayed in transit by an accident to the messenger's horse.

At 10 A. M., when near 23, General A, having continued his march, receives a second message from Colonel B dated 17, 9.55 A. M., stating that the enemy's cavalry has offered no resistance; that artillery and infantry have been seen moving on the ridge from D northeast; that all efforts of patrols to approach anywhere between D and the orchard near the upper road have been met by infantry fire; that patrols trying to work through the woods north of 15—13 have received infantry fire and been driven back; that there was no enemy north of these woods; that Tracy was occupied by a small force of infantry and cavalry; that patrols had gotten close to the road E—F, near Todd's and various points west nearly to the bend in the road, and, except for what appeared to be a strong patrol at Todd's, no enemy

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was seen there; that all attempts to reach this road west of the bend have been met by heavy infantry fire from the direction of Spinner's and driven back.

Required:

1. General A's estimate of the situation.
2. His orders.

Solution:

General A's order directed him to keep the enemy east of the Platte River; but on reaching Weston he finds a Red force already on its west bank. Unquestionably his mission is to drive it back if it be reasonably practicable to do so. Before deciding on his probable ability to drive back the enemy he must consider all the evidence he has as to the strength, position, and probable action of the enemy.

From the postmaster's report he believes the enemy's total force in this vicinity consists of 2 regiments of infantry, 1 regiment of cavalry, and 1 regiment of field artillery, with probably a few special troops such as engineers and a hospital detachment. While this seems like a disproportionately large force of artillery, yet considering that it was an isolated force and might have to retreat under pressure, the Red commander may have given the detachment an undue proportion of that arm. The enemy apparently has one-half of the artillery of a division with less than one-third of its fighting strength. That the detachment should be strong in cavalry is easily understood.

From Mr. Spinner's report General A decides that a force consisting of 2 squadrons of cavalry, a battalion of infantry (or possibly 6 companies), and 2 batteries were this morning detached from the main force and marched toward Leavenworth; that later 2 companies of infantry with machine gun platoon marched to the Spinner hill, and according to the cavalry report are still there. This would leave in the enemy's main body about 4 battalions of infantry, 1 squadron of

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cavalry, and 4 batteries. The report of the cavalry commander confirms him in this belief.

At first glance the enemy's movements appear very strange, but General A comes to the conclusion that the enemy is a raiding force; that operating in hostile country his information is poor; that his force reached Platte City last night; and that, totally unsuspecting the near approach of General A's command he has taken a big chance by sending away a large fraction of his force, remaining behind with the rest to cover his crossing at Platte City. The enemy may or may not know of the destruction of the bridges on the lower Platte. General A does not believe that the whole force, if any of it, is going to Lansing. Leavenworth is a large town, has several large manufacturing plants and would in itself offer plenty of inducement to attract a raiding party. General A believes Leavenworth to be the destination of the detached party, a part or all of the cavalry possibly going on to Lansing. From their very early start General A infers that they intended to accomplish considerable work of some kind during the day, and he believes that they will return to Platte City before night.

In all probability the first intimation which the enemy had of General A's proximity was at 8.30 when the cavalry combat occurred; this would not have been known to the Red commander at once.

To recapitulate General A's belief as to the enemy: A Red force arrived at Platte City late yesterday afternoon and went into camp there with cavalry outposts on the west side of the river. The Red commander, in total ignorance of the approach of General A, started out a detachment early this morning on a raiding expedition to Leavenworth, the cavalry probably to push on further, the whole force to return this evening. The cavalry combat at 8.30 a. m. warned the Red commander that the enemy was near and believing it to be only cavalry, although superior to his own, he sent two companies of his infantry to Spinner's to delay the advance

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of this force toward Leavenworth. As soon as the Red commander found he was opposed by a strong force of all arms a hurry message was sent to recall the detachment which had started toward Leavenworth in the morning and an effort was made to concentrate the rest of his troops to defend the bridge. This message was probably not sent until after 9 A. M., and when it reached Leavenworth the troops there would doubtless be scattered, the cavalry far beyond, so that they could not get back to the Platte City bridge until well after noon. (Mr. Spinner who remained where he could see until 9.10 A. M., says that they marched towards the Terminal Bridge).

General A further concludes that the Red commander, in order to cover the Platte City bridge, has concentrated all the force available in a position of readiness behind the ridge northeast of D, covering the front of D to the woods with a very thin line, or better with small observation groups, with detached posts in the woods and at E, so that he may meet an attack, as best he can, wherever it may come. General A has no doubt of the advisibility of attacking and that the attack should be made promptly before the return of the enemy's detached force. But how? From D to the woods northeast of 15 is such a long line that General A is convinced that the enemy will not attempt to hold the whole of it, except by the observation groups already referred to, but will throw in his main force wherever the attack develops.

It is undoubtedly best to make a frontal attack near the center and an enveloping attack at one flank or the other. Both flanks offer advantages and disadvantages. As to the injury to be inflicted on the enemy, should he be defeated and driven back on the bridge, there is little choice; in either case, if the victory is properly pushed, he should be virtually ruined. A force of this size thrown back in disorder on a narrow bridge must suffer heavily if the assailant pushes forward, and the nearer to the bridge the break occurs the poorer the chance the defeated force has of getting away. As to the

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withdrawal of the Blues in case of failure, General A sees that this can be done about as well from one flank of attack as the other; in any case his line of retreat is practically perpendicular to his line of attack. He does not consider the force at Spinner in this connection for if it be not withdrawn it can easily be masked.

As to the ground, General A sees a considerable disadvantage in attacking the enemy's right flank: the woods on the north, already occupied, would certainly be reinforced as soon as a movement against this flank was started, and the cover of the timber would greatly help the defense; the western and northwestern edges are well located to sweep the country west and north and enfilade the ravine south of Harris. General A realizes that, even should he be victorious there, pushing even a defeated force through those woods would be slow work and lead to great disorganization in his own command. The loss of time and the disorganization are both to be avoided, so far as practicable, for the return of the detachment from Leavenworth must be considered. Moreover, on the enemy's right flank little cover is available for General A's attack. But on the enemy's left General A sees that he can move a column under cover from 25 to the second ravine northeast of E, and there deploy and move on D with cover for some distance further, so that his attack will have a comparatively short space to cover in the open. If the enemy is in a position of readiness, the later he becomes positive of the line of advance, the better for General A.

The great advantage General A has is due to the separation of the enemy's forces. By attacking the left, General A may be able to keep them apart without at the same time unduly dispersing his own force. Assuming the principle that the attacker must have a large superiority, the advantage of this separation becomes apparent. If the enemy unites, General A must, to succeed, have this superiority over the enemy's total force, which he hardly possesses; but if,

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by careful reconnaissance, he gains early information of the approach of the Leavenworth detachment, he can detach a weaker force to contain it and still maintain a sufficient superiority over the enemy now in position to defeat him, and afterwards can turn his entire strength against the other hostile force and, in turn, defeat that.

General A now looks for an artillery position that will fulfill the requirements for an attack on the enemy's left. The spur south of G. Miller is the one selected. It is within 3500 yards of the D–orchard line, can be gained under cover, and, if it is necessary to meet the force from Leavenworth or to follow up a victory, the 21—49—E road is readily accessible. In this position the artillery can use either direct or indirect fire, and can effectively support both main and secondary attacks. The position has also another possible advantage. No consideration has so far been given the small force of the enemy at Spinner. While General A considers that it may be withdrawn to the main position, unless afraid to make the flank march in the presence of his cavalry, still it may remain, and if so it will be within effective artillery range from the selected position.

From General A's chief reason for attacking the left flank—to keep the enemy separated—it is apparent where he should place the bulk of his cavalry. It must be towards the south to look out for the Leavenworth detachment and, if necessary, to delay its return. The baggage wagons must not be allowed to get close to the field, they must be kept back at least as far as Weston. Bee Creek crosses General A's line of advance but is so small that it can be ignored. A detachment from the engineer company might be required to improve the crossings, if found necessary, but the bulk of this company should be used to observe toward Spinner, if the enemy is not withdrawn from there. General A therefore comes to the following decision:

To attack the enemy at once, enveloping his left flank, the secondary attack being made along the 17—15 road; to

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place his artillery on the spur south of G. Miller; to keep most of his cavalry south of the E—D road; to establish his dressing station on the little stream in the ravine north of E, where it will be sheltered from fire, near water on the flank where the bulk of the casualties will probably occur, and convenient to a road available for the evacuation of the wounded. Owing to the uncertainty as to the whereabouts of the Leavenworth detachment, General A will keep a reserve in his own hands to meet emergencies, and will hold it well toward his right. At first he will only mask the Spinner force—if it has remained there—with the engineer company, though he can order artillery fire opened on it, and even direct part of his reserve against it, if it be necessary; but his idea is to ignore it, unless it gets too active, until he has completed his attack on the enemy's main detachment; for if this be successfully accomplished the rest will be easy.

As General A is so far to the front he can look over the ground and promptly assemble most of the necessary officers and issue orders so as not to necessitate any halt in his command. His advance guard, consisting of two battalions, 1st Infantry, will move by West Platte and make the secondary attack. The remainder of the force will turn south after crossing the little stream east of 25 and take its assigned positions.

2d Requirement:

Det. 1st Division,
School House near 23, Mo.,
1 Sept. 08, 10-15 A. M.

Field Orders
No. —

1. The enemy, estimated strength about 4 battalions of infantry, 1 squadron of cavalry, and 4 batteries of artillery, is in position along ridge from D northeast and is holding the woods to the north of the 15—13 road. A detachment of about two companies is

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probably in position at SPINNER. A force consisting of two battalions of infantry, 2 squadrons of cavalry and 2 batteries, was detached by the enemy this morning and is now believed to be at or near LEAVENWORTH. Our cavalry defeated and drove back the enemy's cavalry this morning.

2. This detachment will attack the force on the ridge D—orchard, enveloping his left flank. The duties of the advance guard as such now cease.

3 **a**. The 5th Reg. F. A. will at once take position south of the G. MILLER house and, as soon as the enemy develops his position, open fire; his artillery will be the target as soon as located.

b. The secondary attack consisting of the 1st Inf. (less 3d Bn.) will move by WEST PLATTE, left of line on 17—15 road and at once open the attack; it will fully support the main attack when developed.

c. The main attack under Colonel B, consisting of the 2d Inf. and 3d Bn., 1st Inf., will turn south immediately after crossing stream east of 25, moving to the woods north of 45, thence under cover to the second ravine northeast of TODD, there deploy and move against D. The attack will be vigorously pushed.

d. The 3d Inf. will constitute the reserve, under my order. It will follow the main attack to the woods northeast of TODD and there take position under cover.

e. The 4th Reg. Cav. (less 3d Sq.) will cover our right. It will reconnoiter well toward the TERMINAL BRIDGE, and, in case of the approach of an enemy from that direction, will delay his advance as much as possible. Patrols will cover our left flank.

f. Co. A, 1st Bn. Engrs., will take position in the woods near 45 and observe SPINNER.

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g. The signal detachment will establish lines of information from the artillery, from near the secondary attack and from 12 to my station.

4. The baggage wagons will await orders at northern exit of WESTON.

A dressing station will be established in ravine north of TODD.

5. I will be on knoll east of TODD.

A,
Brigadier General.

Verbally to Col. X, 5th F. A., Col. A, 1st Inf., Col. B, 2d Inf., Col. C, 3d Inf., Capt. E, Engrs., Lieut. F, Sig. Corps and staff. Copy by Lieut. Y to Col. B., 4th Cav.

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PROBLEM 2*

Forcing a River Crossing

FORT LEAVENWORTH TWO-INCH MAP

Situation:

The commanding general of a Blue army near Omaha learned that a Red force, operating in hostile country and consisting of two regiments of infantry, one squadron of cavalry, and one battalion field artillery, had seized Leavenworth and vicinity and captured a large quantity of ordnance stores and supplies badly needed by the Red army and has also taken as prisoners about 2500 of the Blue army, mostly unarmed recruits and convalescents, and was seizing teams and wagons with which to carry away his captured stores.

The commanding general thereupon sent General A with one brigade of infantry, two regiments of cavalry, one regiment field artillery, one company of engineers, detachment of signal troops and ambulance section, field hospital, to Leavenworth to regain the enemy's captures and destroy his detachment.

The Missouri Pacific R. R., which had been damaged, was hastily repaired, unknown to the Red commander, as far south as Kickapoo. General A reached Kickapoo with his infantry, artillery and one troop of cavalry and detrained by 4 A. M., July 1st, and by 6 A. M. had surprised the small hostile detachment guarding it and secured the Fort Leavenworth bridge. The remainder of the cavalry and the special troops were not expected to reach and detrain at Kickapoo until 11.30 A. M.

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*Army School of the Line, 1907–8, Course in Tactics—Part III; Map Problem No. 13.

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From friendly inhabitants and patrols General A, at 7 A. M., learned the following: The enemy's convoy consists of between 400 and 500 wagons and his prisoners; the enemy crossed the Missouri River yesterday afternoon and camped last night on the high ground south of 10—52, and on General A's appearance at the Fort Leavenworth Bridge, began rapidly crossing the Platte River at the three bridges south of Platte City and destroyed the bridge at the latter place.

General A at once crossed the river in pursuit. Stubborn resistance soon developed; but by 11.30 A. M. General A succeeded in forcing the enemy across the Platte River in disorder and had his own forces well in hand along and south of the 12—50 road with detachments close to the three bridges to prevent their destruction.

These bridges are of stone and the retreating enemy was so closely pursued he was unable to destroy or injure them; but he has posted troops at all three to prevent a Blue crossnig.

General A knows that the Red commander can receive no assistance until he reaches on his retreat a point 40 miles east of Platte City.

A heavy rain last night rendered the roads heavy, but the weather is now fair and the roads are rapidly improving.

Required:

1. General A's estimate of the situation.
2. His order.*

Solution, 1st Requirement:

General A's mission is to regain the enemy's captures and destroy his detachment. To do this he must promptly force a crossing of the Platte.

General A's command is still divided; all his special troops and two regiments of cavalry, less one troop, have

*No solution of 2d Requirement was written as the order presents no difficulties.—*Ed.*

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just detrained at Kickapoo and it will be nearly two hours before they arrive at 12.

The enemy has two regiments of infantry, one battalion of field artillery and one squadron of cavalry; but he also has a convoy consisting of about 500 wagons and 2500 prisoners of war. As the wagon train is impressed, his convoy is an awkward one to handle and will require a relatively large guard which must be taken from his fighting force.

General A appreciates that, without waiting for the remainder of his command, he has in the vicinity of 12—50 a large superiority of force in artillery and infantry, the two arms he most needs to force a crossing; especially is a preponderance in artillery important for this work.

In morale General A's force has just been flushed with a victory and the enemy is correspondingly depressed by defeat and in some disorder.

Time is important. The trains began crossing at the three bridges south of Platte City at about 6 A. M. Undoubtedly they have continued to push on eastward, but at first must have moved slowly on account of the condition of the roads.

The roads are improving all the time. This is a point in General A's favor, as the enemy's teams were struggling along the roads at their worst while the roads will be better by the time the cavalry takes up the pursuit.

The distance the enemy must go before being practically safe is forty miles; if not overtaken, he can make this tomorrow noon if not earlier.

The value of the addition of practically two regiments of cavalry to General A's fighting strength, which he can have by waiting two hours, is apparent; also the advantages of night for placing his troops for the attack; General A, however, has but one course open to him—to force if practicable a passage across the Platte at once. 2500 brother soldiers are being taken into captivity, to say nothing of the stores so important to the enemy; this alone should force

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him to act today; if he waits until darkness to attack, the convoy will be beyond his reach.

Shall he wait for his cavalry? He can see no reason for doing so. He has ample force now in hand to force a crossing. After a way is opened the work for his cavalry will be hard and it would be folly to risk unnecessarily their being roughly handled just before starting out. He wants them in prime condition. Having come by rail to Kickapoo, and only from Omaha, they should be ready for a long hard march before dark, and if they are to make this march, a crossing should be ready for them on their arrival or soon thereafter.

It remains then to determine whether an attack is practicable and if so, where it had best be made. The enemy has destroyed the bridge at Platte City, but there remain three bridges, at 54, 60 and 72, which he was not able to destroy, but at which he has detachments. The two railroad bridges farther south need not be considered as they are obviously impracticable. The front included by these three bridges is nearly four miles—a long line; but it is probably held by detachments at each bridge with all the rest centrally located as a reserve.

Forcing a passage across a bridge in the face of the enemy is a serious operation and to be practicable will generally require many favorable conditions such as a close approach under cover, good position on the opposite side, etc. More generally the success will depend, if the attack is made in daylight, on ability to search with fire all the ground near the exit from the bridge and render it untenable to the enemy. To do the latter requires favoring terrain and superiority in strength, especially in artillery. This superiority General A has. Considering these bridges in the light of these requirements General A first considers the one at 54.

The hill at Baldwin can be reached under cover from the enemy, infantry can move to the ravine north of 50 and thus approach still nearer the bridge under cover; after crossing there is room for deployment and, if our fire is properly

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managed, an attack on the hill in front can be organized with relative safety. Once that hill is seized the crossing can be made safe and, with the superiority of force, our aim can be attained.

Can the Blue force be so arranged and its fire be so directed as to carry out the last condition mentioned? General A sees that, by placing artillery near 52, its fire can sweep the northern face of the hill in question and thoroughly search the ravine nearby; can sweep the western face of the hill and enfilade any line along this crest and cover the level ground nearby; can enfilade the plateau except the small portion east of the peak.

Nearly east of 54 is another ravine which might afford shelter to the enemy. Artillery at 52 or north of 50 cannot effectively search it, but artillery placed south of Peterson can render this ravine untenable, and can cross its fire with that at 52 in front of the bridge and along the western slope of the hill and on the plateau. If the enemy tries to place guns anywhere on the plateau, to assist in the defense of the bridge and prevent the Blue troops from forming for attack, all his best positions will be enfiladed by the Blue artillery at one or the other of these positions discussed.

General A also sees that infantry deployed east of Baldwin can bring fire of position on the ground east of the bridge and along the western slope of the hill and can thus aid the attack.

It is therefore apparent that an effort to force a passage of the river at this point will probably succeed. The terrain is favorable, and with cross and enfilade fire of greatly superior artillery and heavy direct infantry fire the ground on the opposite side will be rendered practically untenable for the enemy.

In studying the bridge at 60 General A sees that the conditions are not so favorable. To reach this bridge he must pass over a long stretch of open ground convex to the enemy; the only open ground for a deployment on the opposite side

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is to the left of the road in a narrow valley commanded from both sides and without cover.

To attack from this valley the hill to the south he will have a small stream across his path likely to be a considerable obstacle from recent rains.

General A cannot find locations for his troops on his side that will enable them to overwhelm with their fire the enemy covering the bridge. Artillery near Peterson can reach the northern part of the western face of the hill south of 58, but there are good positions for the enemy that cannot be effectively reached by such fire and the range is too long for effective infantry fire of position to help.

Placing part of his artillery on the hill north of 46 would help, but there would still be left ground impossible to search.

The bridge at 72 is found to be very unsuited to such an operation.

There is a long stretch of open country to be passed over before reaching the bridge and open ground on the other side.

The slope of the ground east of 72 is so open and glacis like as to make it a hard position to attack; if steeper and rougher it might afford cover. Cross fire where most needed can not be obtained, and several good positions are available for the enemy which cannot be reached by fire from the western side.

This is the least available bridge, tactically considered, and has still another disadvantage in that it will take much longer to prepare the attack here, allowing the enemy more time to reorganize and possibly to intrench.

There then remains for General A to determine whether to attack one bridge or make a feint at one in the hopes of drawing the enemy's reserve there and then attack later another.

A feint, to do any good, must be strong enough, especially in artillery, to cause the enemy to move his troops to meet it, or in case it is accepted by the enemy as a ruse and is

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unopposed, to be successfully made real. Another consideration that must be provided for is that at the decisive moment of the real attack you must be able to concentrate all your effort at the bridge selected.

From what has gone before the only question now for General A to decide is whether to concentrate all his effort on the bridge at 54 or to make a feint at 60 and then attack 54. Either, he feels, will be correct, but he decides on the latter course, for if it has, in this particular case, few advantages, there are still some, and at all events little time will be lost by adopting it.

Assuming that the bulk of his artillery is near 12, to reach 52 under cover will take as long or longer than to go to a point south of the Peterson house, and his leading infantry can reach 48 before the artillery can have prepared the way for an infantry advance on the 60—58 bridge. The artillery position south of Peterson, while not the best for a decided attack on this bridge, must be taken since it will answer the purpose of a demonstration against the 60 bridge and yet is there, at the proper time, it can effectively assist the main attack, and the latter is the important thing.

General A therefore decides to place one battalion of his artillery near 52, the other a short distance south of the Peterson house, the latter battalion to open fire at once as though to open a way for an attack on the bridge near 60 but, as soon as the attack begins at 54, to support that. Two battalions of infantry will form the right column and move at once to 48 and attack. The remainder of the infantry will constitute the left column; one regiment to move down the ravine north of 50 and approach the bridge as nearly as practicable under cover and there await orders from the commanding general; one regiment to remain massed under cover west of Baldwin, as a reserve; the other battalion to be deployed and, when the attack is ready to open, to move forward to the crest of the Baldwin hill to fire on the enemy.

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General A proposes to push matters so as to have a road open for his cavalry when it reaches him. The small detachments at the 54 and 60 bridges will naturally be absorbed in the attacks at these places. Part of the troops of cavalry will patrol the river; the rest will be sent to join the detachment at 72 and the combined force will demonstrate against this bridge but without incurring losses.

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PROBLEM 3

To Secure a River Crossing

FORT LEAVENWORTH TWO-INCH MAP

Situation:

The Missouri River forms the boundary between contending states. A Red army has been mobilizing near Seneca (about 70 miles northwest of Leavenworth). A Blue army is advancing from the east to invade Kansas.

A Red detachment under General B, consisting of 2 brigades of infantry, a regiment of artillery and a squadron of cavalry, has been hurried forward to seize the Rock Island Bridge (the Terminal Bridge having been destroyed) and to prevent the crossing of the enemy until the arrival of the Red army. When the main body of the detachment reaches Lowemont at 10 A. M., May 7, General B learns from citizens that a hostile force, estimated to be a brigade of infantry, a battalion of artillery and a squadron of cavalry, crossed the Rock Island Bridge early this morning, and that a heavy Blue force is reported to have camped a few miles east of Platte City. About the same time General B's cavalry reports that they have driven in hostile cavalry on the Millwood Road and Atchison Pike, but draw infantry fire when ever they attempt to approach the ridge from Salt Creek to Frenchman. A strong patrol sent round by the Zimmerman Road succeeded in reaching Southwest Hill, but was driven off by small arms fire from Government Hill. All efforts to locate the hostile artillery have failed.

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*Army School of the Line, 1907-8, Course in Tactics — Part IV, Map Problem No. 5.

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Reinforcements are not expected to reach General B before noon tomorrow.

Required:

1. General B's estimate of the situation.
2. His orders.

Solution, 1st Requirement:

In order to accomplish his mission General B must first defeat the inferior Blue detachment before it can receive reinforcements. He might abandon the bridge to the enemy, but its possession is evidently of great importance to both armies. He would scarcely be justified in neglecting any reasonable chance of securing it. The appearance of the hostile detachment has not changed his orders. He must make every effort to carry them out.

Friendly citizens estimate the Blue detachment to be only half as strong as the Red in infantry and artillery. The Blue cavalry, though supposed to be equal in numbers, has everywhere fallen back before the Red cavalry, so that General B has been able to obtain unusually definite information as to the position of the Blue force. It is holding the line of the ridge from Government Hill north to the Missouri River and includes in the line Sentinel Hill. The Blue detachment is too small to attempt to occupy this line as a defensive position, and it is probable, therefore, that the bulk of the force is held in some central position, ready to reinforce the special point against which the attack may be directed.

The intention of the detachment is, evidently, to secure the Rock Island Bridge for the passage of the large Blue force reported to have camped east of Platte City. The present position of this force is not known. It may be very near the bridge, or it may be still distant a day's march. The Red detachment is about 6 miles from Sheridan's Drive. Time is, therefore, of the utmost importance.

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The sooner General B makes his attack the more chance he has of success. Reinforcements will not reach him until noon tomorrow and he need not consider them except as possible assistance in case of defeat.

There are three main lines of advance open to the Red detachment: the Millwood Road, the Atchison Pike and the 80—76—96—100—Zimmerman Road. The first two are the most direct routes; but they are exposed to artillery fire from Sentinel Hill and Sheridan's Drive up to extreme ranges which would necessitate an early deployment and an advance over dangerous ground. The Zimmerman Road is 1½ to 2 miles longer and the terrain more difficult; but troops on this road would be concealed from view and, to a great extent, sheltered from artillery fire; so that they could approach much nearer to the Blue position before deploying. As a Red patrol, reconnoitering the Zimmerman Road, has located the left of the hostile line on Government Hill, it is scarcely probably that the enemy will venture to advance his guns toward Hund Hill.

General B does not contemplate making an attack through Kickapoo since it is open to the same objections as an advance over the Millwood and Atchison Roads and is longer. Nor has an attack through Leavenworth anything to recommend it. It involves a long detour, uncovers the line of communications and offers little opportunity to make use of the Red superiority in artillery. It is important that General B utilize his strength in this arm to the greatest advantage in order that the enemy may be overwhelmed as speedily as possible.

According to the map, positions for the Red artillery north of the Union Pacific Railroad would be pretty well commanded by hostile artillery on Sentinel Hill and Sheridan's Drive. Any attempt to reach positions from which an effective fire could be delivered on the Blue line would necessitate an advance over exposed routes.

But, south of the Union Pacific Railroad, Hund Hill offers

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an excellent position from which to support an attack by the Atchison Pike or the Zimmerman Road, and it can be approached under cover by the 80—76—96—100 road.

Eleven Hundred Hill is too far to the left of the Blue line on Government Hill for a first position and, besides, its western face is more or less exposed to artillery fire from Sentinel Hill. Hund Hill, therefore, seems to be the best position for the Red artillery.

It would be a mistake for General B to attempt an advance with his infantry on all three of the main roads previously mentioned, for it would distribute his force over a front of three miles and, moreover, the Millwood Road is too far from Hund Hill for an attack along that road to be properly supported by the Red artillery. Thus General B is really limited to the Atchison Pike, and the 76—96—100—Zimmerman Road for his lines of advance.

The hostile artillery has not been located and there is very little chance of locating it until it is developed by the Red attack; but it is safe to assume, however, that the enemy will use it to the best advantage. Artillery on Sentinel Hill would oblige a Red column marching on the Atchison Pike to deploy some distance west of I. There is, however, no position in the Blue line which covers the 76—96—100—Zimmerman Road. Although it is somewhat longer than the Atchison Pike an advance can probably be made on this road in less time, and certainly with less loss. It would not be well, however, to put the entire force on the southern road as to do so would uncover the Red line of communications and neglect an opportunity of possibly misleading the Blues as to the main attack.

General B therefore decides to attack as follows:

The artillery to take position on Hund Hill and support the attack; one regiment to make a secondary attack along the Atchison Pike; three regiments to make the main attack, advancing by the M—80—76—96—100—Zimmerman Road

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against Government Hill; two regiments to constitute the reserve and follow the main attack provisionally to 30; the cavalry to cover the right flank, reconnoitering through Leavenworth toward the Rock Island Bridge and sending patrols by the Millwood Road, Kickapoo and the Missouri Pacific Railroad.

On account of the danger of artillery fire from Sentinel Hill General B issues his order before the detachment passes M. C. Kennedy. He knows the position of the enemy's line and has decided upon his plan of attack. He will not learn anything more of the hostile dispositions until he has developed them by his attack. He therefore issues the following order:

2d Requirement:

Hq. Det. Red Army,
M. C. Kennedy, Atchison Pike, Kansas.
7 May 08, 10-25 A. M.

Field Orders
No. 2

1. A hostile detachment of about a brigade of infantry, a battalion of artillery and a squadron of cavalry, crossed the ROCK ISLAND BRIDGE this morning and now occupies SENTINEL HILL and the ridge from GOVERNMENT HILL north to SALT CREEK HILL.

A Blue force is reported to have camped last night several miles east of PLATTE CITY.

Reinforcements will reach us at noon tomorrow.

2. This detachment will at once attack the enemy enveloping his left flank. The order of march is to be considered terminated.

3 **a**. The artillery, moving by the same route as the main attack will take position on HUND HILL and support the attack.

b. The 1st Infantry will advance along the ATCHISON PIKE and gain a suitable position from which

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to advance subsequently against SENTINEL HILL in support of the main attack.

c. The 2nd Brigade will make the main attack, moving by the M—80—76—96—100—ZIMMERMAN ROAD and SOUTHWEST HILL against GOVERNMENT HILL.

d. The 2nd and 3rd Infantry, under General C, will form the reserve, following the main attack provisionally to 30.

e. The cavalry will cover the right flank, reconnoitering through LEAVENWORTH toward ROCK ISLAND BRIDGE and sending patrols by the MILLWOOD ROAD, KICKAPOO and the MISSOURI PACIFIC RAILROAD.

4. The baggage train will halt just west of LOWEMONT.

5. I will be with the main attack until it passes 30; thereafter at 26.

B,
Major General.

Verbally to staff, brigade commanders, colonel of the 1st Infantry and the artillery commander. Copy by aide to cavalry commander. Report by wire to Red army commander.

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PROBLEM 4*

Covering a Flank March

FORT LEAVENWORTH TWO-INCH MAP

Situation:

On September 1st, a Blue division, in hostile territory, is in and about Leavenworth, holding the bridges in that vicinity. The division is encamped on the military reservation except a detachment consisting of the 1st Brigade of Infantry, 1st Squadron, 5th Cavalry, and 1st Battalion, 1st Field Artillery, under command of Brigadier General A, which is west of the railroads and just south of Shawnee Street.

Kansas City is held by another division of the Blue army, as is Atchison. At 8 P. M. the division commander sends the following order to General A:

Headquarters 1st Division,
Leavenworth, Kansas,
9 Sept. 09, 8 P. M.

To Brigadier General A:

1. It has been learned that the 1st Division, 5th Red Corps, crossed the Missouri River at Wolcott† today and is camped tonight at Lansing. The 2nd and 3rd Divisions of the same corps, began arriving opposite Wolcott at 7 P. M., and are there going into camp.

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*Army School of the Line, 1908–9, Course in Tactics—Part III, Map Problem No. 1.

†About eight miles south of Lansing on the western bank of the Missouri River.

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2. The corps commander has ordered that I withdraw my division to Atchison. The division will march at 5-30 A. M. tomorrow by Zimmerman Road—96—90—Lowemont.

3. The trains will assemble at 5 A. M., head at Atchison Cross, and move by the Atchison Pike.

4. The 5th Cavalry (less 1st Squadron) will proceed at 5 A. M. to the Big Stranger and destroy the bridges south of 88 to include the one four miles south of 174 and observe the country between the Big Stranger and your command.

After destroying the bridges, the cavalry commander will report to you for orders.

5. Your command will cover the movement until the main body passes Millwood. Your trains will join those of the division.

X,
Major General.

Required:

1. General A's estimate of the situation.
2. How he proposes to execute his mission.

Note.—The Big Stranger is in flood and unfordable.

Solution, 1st Requirement:

General A's mission is clear to him: his division is going to withdraw from the vicinity of Leavenworth to Atchison and a strong enemy is but a short distance to the south and will be on the flank of the march during its first part. Moreover, the division at the start has practically a defile to pass. General A must keep the enemy beyond artillery range of the column for the whole distance if possible, but especially until it has passed 100.

His force is given in the problem. At first he has but one squadron of cavalry under his immediate command; but two others, sent away to destroy the bridges on the Big

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Stranger, are to observe the country between that stream and General A's detachment. This is virtually an additional cavalry force since it materially diminishes the territory that General A must observe, and the fact that so much of our cavalry is in that locality, so close to the enemy, will irresistibly draw to it much of his mounted force.

In regard to the enemy we have unusually definite information. The 5th Red Corps has suddenly, and probably unexpectedly, appeared in this theater of operations. As he is in friendly territory, it has been comparatively easy for the enemy to conceal his own movements and learn ours.

Of his three divisions one is at Lansing only about six miles from Delaware Street and less than five miles from General A's outpost line. The other two divisions, at 7 P. M., were just arriving opposite Wolcott.

The division now at Lansing is the one General A has to consider particularly. Its strength is equal to that of the whole Blue force at this point and about three times that of General A's detachment. The two divisions at Wolcott will first have to cross on pontoon bridges, a slow process, and will then be nearly 14 miles from Leavenworth. General A sees, therefore, that if he can successfully accomplish his mission until the advanced troops from Wolcott can arrive within range of him, the Blue division will be safe.

The enemy's probable intentions must be determined by General A. He sees that one division has been pushed well forward with a river separating it from the remainder of the force. This division has arrived at evening within easy striking distance of our force and there bivouacked. There is no aggressive use of cavalry. General A believes cavalry was not used, not for lack of that arm, but because the division commander already has full information of our force; that he does not care to stir up the Blues, nor exhaust his horses; but wants to be prepared for a most strenuous day on the morrow, especially for his cavalry.

General A interprets the enemy's general move to mean

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that the enemy, being well acquainted with the topography of this section, has pushed his leading troops forward as soon as possible to get within striking distance of the Blue division and, by vigorously attacking, to hold it fast until more troops arrive and either capture or destroy it.

The Blue division is now in something of a pocket and probably only prompt action on General X's part and skillful work by General A can save it.

General A believes the Red division will move early in the morning and try to seize the high ground south and southwest of Leavenworth and with his fire block the movement of the Blue division into Salt Creek valley.

If the enemy can gain this position General X will have to attack and drive him off to open his road. For General X to succeed in this operation would take a very long time, even if it proved possible of accomplishment in this country, and in the meantime more Reds would come up and the Blue division would find itself compromised. General A believes the point first aimed at by the enemy will be the ridge 138—210, from which the Red artillery can reach the Zimmerman Road and Atchison Cross and the roads leading to them from the east. The enemy, on this ridge, would be in an excellent position to push forward farther to the north and still more completely force our division either to give up its withdrawal or to engage in a general battle to drive the Reds away. Either alternative would suit the enemy and would be bad for General X's command.

The enemy has several roads by which he can advance:

1st. The road past the Soldier's Home direct to Leavenworth. This is through level open country, can be easily observed by the Blues, and is too near the river, while to fight his way through the city is the last thing the enemy would care to do.

2d. 190, past the Race Track to Pilot Knob.

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3d. 190 by 148—202 to 206 or 208.

4th. 190—150—144.

He could also move west from 190 and turn north at 158, 166 or 168.

General A believes that the 2d or 3d routes or both will be taken as they lead most directly to where the enemy is likely to want to go. An attack as far west as 134 would suit the enemy's purpose, but, time being such an important element, it is more probable that he will move on roads from 190 to 150 inclusive.

General A does not expect that the enemy will move on any road west of 150 as it would be too roundabout for an attack on the 138—210 ridge and, while he hopes the enemy will move west, say to 168, and then north, he does not see much chance of his doing it.

General A figures the main body of the Blue division will occupy road space as follows:

2 brigades of infantry - - -	5,000
9 batteries - - - - -	3,850
3 companies engineers (1 Co. with pontoons) -	420
1 company of signal troops - - -	300
At least one field hospital - - -	320
	9,890
Intervals, elongations and advance guard approximately - - - -	3,000
	12,890

Call it 7⅓ miles. Assuming 62 as the initial point for the column to start, it is a little over three miles to the far side of the stream at 100. The tail of the column should then reach that point in 4¼ hours or at 9.45 A. M., and the point of the advance guard at the same time would be nearing Lowemont. As it is early in the march the elongation may be less than estimated and intervals may be reduced, but it is safer to accept these figures.

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In case the enemy should advance by 132 he could reach that point with the head of his advance guard in four hours, or 120 in five hours. This estimate does not allow for delay on account of hindrance to his reconnaissance by our cavalry, and as, in moving west, he will be pushing directly into two squadrons, these would certainly cause him some delay. If the enemy moves this way General X, whose artillery would be about at 84 by that time, could readily take up a position extending southeast from there. The enemy would then have to make a frontal attack against a position covered by a stream. General X, deploying to a flank, could do so more easily and quickly than the enemy could on the head of his advance guard, and General A could by that time occupy the ridge west of 102 which would also be an extremely difficult one to rush. Should the enemy here form line to advance against General X, General A could enfilade him, and General X could perform the same service for General A in case the enemy advanced against him. Besides, on the enemy's left flank there would be the unfordable Big Stranger. The Red division would be running a fine chance of ruinous defeat if it put itself in this pocket.

What, on the other hand, would be the worst that could happen to General X's command if the enemy did advance by this route? His wagon train by this time would be safe and far enough to the rear to be out of his way before he could be defeated, and, if defeated, he would only be driven back on his reinforcements in what would merely be a defeat, and nothing more. General A does not believe the enemy will advance this way.

Should the enemy move directly on the position 210—138, his advance troops, if unopposed, could reach it in about two hours and, under their protection, his artillery could be rushed forward and the attack opened on the Blue division. Under the circumstances it is fair to assume the enemy will start not later than 5.30, and he may start as early as 5 A. M., which would bring him to the position at 7 or 7.30, while,

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as we have already seen, it will be nearly three hours from 5.30, that is to say 8.30, before the tail of General X's command will begin its march from 62.

In view of all this it is evidently imperative that the enemy be kept off this ridge and it is clear that this position and this one only is of vital importance under the conditions of the problem.

Early information of the enemy's movements is most desirable and the cavalry must be used for the purpose of acquiring it.

General A therefore decides: to send all his cavalry at 5 A. M. directly toward the enemy to gain all the information possible; to march with the remainder of his command to 210 and there take up a position in readiness and await developments or information from his cavalry.

2d Requirement:

Under the supposition that the enemy will advance on Pilot Knob General A proposes to prevent the enemy's gaining the ridge anywhere from 210 to 134 before 9.45 A. M. and he believes he can do this. He reasons that the enemy knows that there is a division about Leavenworth but that he cannot know it has begun its retreat. Even if information of the movement should reach him he cannot be sure that the Blue division is not moving out to take up a defensive position or even to attack him. The enemy must, therefore, exercise some caution.

General A desires to become just as little engaged as practicable, for his own withdrawal becomes the more difficult the nearer the enemy approaches.

He proposes therefore to bring the enemy under artillery fire at long range and force him to an early deployment which, with so large a force and the necessary reconnaissance, will take considerable time.

General A next considers his own withdrawal. He has practically three routes open to him:

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1. By the Lecompton Road.
2. By 50—110.
3. To follow the division.

If the enemy advances rapidly and vigorously, General A will probably become so closely engaged before he gains the necessary time that he will not have much choice in his manner of withdrawal and will probably have to retreat by 50, in which case he will move by 110 if he can.

General A wants to keep the enemy from firing into the division, not only until it passes 100, but during the entire march. Fully to accomplish his whole mission th Lecompton Road is the best one for him to take as far as 118. If the enemy in his attack starts to envelop General A's right and is prompt in his movement the Lecompton Road will be out of the question; otherwise he may be able to use it.

If he gets prompt information that the enemy is moving west to 166 or 168, General A will move as soon as it is safe to do so by the Lecompton Road with a view to holding the Mount Olivet position until the road is clear for him to follow the division as a rear guard.

In thus moving west General A may have to detach some force at 134 to make sure that the enemy does not send a detachment north through there, although this is improbable.

General A appreciates that in moving west it may be advisable to move in two columns, using the 128—124 and the 132—120 roads. As these roads are so close together the ordinary objections to such a division do not apply, and it would shorten his line of march and enable him to form for battle much more quickly since the troops on the northern road would in that case be his reserve.

In moving west, and as soon as he gets command of the 2d and 3d Squadrons of the cavalry regiment, he will order the 1st Squadron to remain to the eastward and cover that flank, rejoining at Lowemont.

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PROBLEM 5*

In the Pursuit

FORT LEAVENWORTH TWO-INCH MAP

Situation:

After a severe engagement, about thirty miles west of Easton, a Blue army, operating in friendly territory, defeated a Red army.

The Red army retreated to the southeast towards Kansas City, but a part of one division retired towards Leavenworth.

While the bulk of the Blue army took up the pursuit to the southeast General A, with the 1st Brigade, 1st Division; 1st Battalion, 1st Field Artillery; 10th Cavalry (less 1st Squadron); and 1st Ambulance Company was directed to pursue the Red detachment and to prevent its escape into Missouri. General A's pursuit was close. The remainder of the 1st Division followed but was nearly a day's march in rear.

On reaching Easton with the support of the advance guard at 9 A. M., June 3d, General A learns from citizens that the enemy had established a depot at Leavenworth and that he is now engaged in removing the stores from there as rapidly as possible, but, that at daylight this morning there was still a large quantity in Leavenworth.

At the same time the following message is received:

Near O, Kansas,
3 June 09, 8-45 A. M.

To General A:

There is a Red force near 84 estimated at three regiments of infantry, one squadron of cavalry and

*Army School of the Line, 1908-9, Course in Tactics—Part III, Map Problem No. 5.

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two batteries. Infantry and cavalry organizations are probably not above two-thirds normal strength. Enemy is apparently preparing a position near orchard, southwest of 84, bulk of troops appear to have position in readiness about 500 yards southeast of 84. A wagon train guarded by a force of infantry, estimated at 600, and some cavalry is moving toward Leavenworth, tail of convoy was at 30 at 8-25 A. M. No other hostile troops between 84 and western edge of town.

X,
Col. 10th Cav.

Required:

1. General A's estimate of the situation.
2. His orders.

Solution, 1st Requirement:

General A's mission is primarily to prevent the escape of the Red detachment. Since the receipt of the information about the depot of supplies at Leavenworth he has a secondary objective. The destruction of the Red detachment is, however, the more important; for supplies are cheaper than men.

The information as to the enemy's strength and location is very definite. Under the circumstances this is not unusual. The enemy is retreating through hostile territory closely pursued by a force greatly superior in cavalry. Accurate information is to be expected.

The enemy's strength is reported as three depleted infantry regiments, one depleted squadron of cavalry, both about two-thirds normal strength, and two batteries of artillery. General A has three regiments of infantry, two squadrons of cavalry and one battalion of field artillery; that is to say he is one-half stronger in infantry and artillery and more than twice as strong in cavalry. Then there is probably considerable difference in morale. The Reds are both

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a defeated and a retreating force, the others belong to the victors and are the pursuers.

What are the enemy's intentions and what is his object in halting? This is not very clear to General A. His cavalry reported a wagon train under heavy escort proceeding to Leavenworth but the tail of the convoy was at 30 at 8.25 and there could be no necessity to halt longer to cover that since it would be through the defile before it could be overtaken.

General A can only account for the evident intention of the Red detachment to fight on the supposition that the supplies and stores at Leavenworth are, for some reason, of vital importance to the enemy, and that the detachment in front of him is trying to cover their withdrawal and proposes to make a stand near 84 and, if forced out, to make another in the hills to the east. There is also a possibility that the enemy believes he can completely defeat General A's command and that he has halted for that purpose.

The position of the enemy is rather strong. He has a good field of fire in every direction for a considerable distance, although the woods west of 84 are a drawback. The approach directly from the west is crossed by three wooded ravines with ridges between which will afford much cover, while the ravines are very minor obstacles. From the most eastern of these ravines to the edge of the woods near 84 is only 600 yards.

The wooded stream starting near the cemetery and flowing west into the Big Stranger will afford troops moving along its southern edge considerable cover from fire and more from view.

From the Red position there are several roads to Leavenworth:

84—78—Atchison Pike.
82—92—100—28.
82—94—108—50.

Or, farther south and by the Lecompton Road.

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The enemy evidently will want to reach Leavenworth and to do this roads farther north or south would be too roundabout, while the Lecompton Road would hardly be practicable if he were defeated and closely pursued.

Although the enemy has not yet definitely taken up a defensive position, the bulk of his force is in readiness and General A will find the Red troops deployed to meet his attack from whatever direction it may be made.

General A also considers the probability of reinforcements for the enemy coming from Leavenworth. With a great depot in that town there are undoubtedly more troops there. The escort to the wagon train was, for some reason, unusually large. Does the enemy need more help to remove stores? Is he preparing to make another stand in the hills west of Leavenworth and sending troops ahead to prepare a defensive position? Is it because he fears our greatly superior cavalry? or are many of the escort invalids and convalescents?

If the large escort is only on account of our cavalry it is likely to return as soon as the wagons pass 64.

As the enemy's action in preparing a position clearly indicates a determination to resist General A's advance, probably in order to gain time, it is evident that General A's mission requires him to attack and, as far as possible, in such a way as to make the defeat of the Red detachment complete, and to do this as soon as possible so as to reach Leavenworth in time to prevent the withdrawal of stores from the enemy's depot.

He must decide on a plan of attack. A wide turning movement is evidently impracticable as it would not only be dangerous, but require too much time. He sees that a frontal attack along the R—84 road could advance a reasonable distance under cover and that the attack would probably succeed. He could get within 1000 yards of the enemy with very little exposure. The edge of the woods west of 84 is only about 600 yards from the ravine and would be hard for

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the enemy to hold as it is such a fine target for General A's artillery. Once this point was gained by General A's infantry line the prompt retreat of the enemy would probably soon follow. The enemy will meet General A's line of attack anywhere it comes for he is evidently holding his force in hand to do precisely this thing.

But General A rejects the plan of a straight frontal attack for the reason that the result would be too indeterminate and the cost too heavy. General A would have to deliver his attack up an easy slope; fire superiority would be difficult to obtain, and the enemy on being defeated would merely be forced back on his best line of retreat, so that on reaching the line of hills, General A would probably have it all to do over again.

He will therefore seek to envelop one of the flanks of the enemy's position. Fire superiority will thus be more easily obtained and the enemy will be forced to offer a better target to the Blue artillery. The direction of this enveloping movement should be such as will tend to enable General A to win the most complete victory.

The most important consideration is the infantry attack. There must be, in this case, an attack in front to cover the movement and secure his artillery, which should early come into action. Also his own line of retreat should not be entirely uncovered, for, although General A does not anticipate any aggressive move by the enemy, there is, nevertheless, enough uncertainty about the latter's actions to make him reasonably cautious. The secondary attack will then be made along the 84—82 road, for, as already shown this has advantages. General A must now determine the flank to be enveloped.

In the first place his force is too small for a turning movement and the outer flanks of the two attacks should not be over one mile apart. The hill at P on the north, and Mt. Olivet on the south at first glance look tempting as points from which to launch the main attack, but if either were selected it would cause too much dispersion and the line of approach would be over very open ground.

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On the north of the 82—84 road, troops could reach the ridge southeast of R—Q under cover; the distance from the other attack is not too great; but, from there on, there is open ground for nearly 2000 yards, with possibly a little cover at the heads of the branch ravines.

On the other flank troops could move by 88 and then follow along the wooded ravine toward St. Joseph's Church. By keeping along the southern edge they would be screened from view and, for the greater part of the way, from fire, until they reached a point about 500 yards from the cemetery. This ravine, as an obstacle between the parts of our command, may be ignored. It is believed that the time required for the attack on the enemy's left will not be greater than that for an attack on the other flank. While it is farther from T to near the cemetery than from T to the ridge south of R—Q the remaining distance to the enemy's position is shorter and there is less ground to be covered in the actual attack. From the point of view of the infantry advance the advantage is on the side of enveloping the enemy's left.

Another point to be considered is: which manner of attack will, if successful, produce the most decisive results? General A's line of communication is equally covered in both.

If the enemy's right be enveloped it would tend to push him to the southeast toward the hill 1100 north of 92, thence toward 100 or 108. Either would soon bring him into country difficult for cavalry, having many good positions for delaying action, and routes leading directly towards Leavenworth and support. On the other hand if the enemy's left be enveloped he is more likely to be driven toward 76 and the Atchison Pike. For a long distance there are no high hills to screen him from artillery fire and, after he passes 76, the cavalry will have a fine opportunity to complete his ruin.

If General A is to be entirely successful in his mission he must ruin the Red detachment promptly and not merely engage in a series of actions lasting all day.

The next thing is to consider positions for the artillery.

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The hills P and Mt. Olivet are excellent except for their wide separation from the infantry and, as regards the latter, the time required to get there; they receive only passing consideration and are rejected.

Near the elbow in the R—84 road can be found a good position. From there artillery fire can support the secondary attack and will have almost an enfilading fire on a line formed to meet an attack from the south. There is also a good road from this position by which the artillery can advance if required. This position is 100 feet lower than the 1100 hill near 84 but that hill can be seen from the position and the difference in elevation is of little consequence. Another advantage of this position is that it can be quickly reached under cover and the attack promptly opened.

A good position at shorter range can be found near Q but it is so far away that if the enemy's left is attacked it would require a special escort for the guns and cause unnecessary dispersion. If the enemy's right were to be enveloped that would be the preferable position.

The main body of the cavalry is now to the north of the enemy. To change it would cause much confusion besides loss of time, as it would have to cross the columns advancing to attack or move well to the east beyond artillery range from near 84. There is, moreover, no apparent advantage in having it on the south and, if the enemy's left is to be enveloped, there is a decided advantage in having it on the north.

The trains must be halted before reaching Easton. If halted two or three miles west of there they will be near enough to reach the night's camp if General A's attack is successful and will not block the road and cause trouble in case he is defeated.

The establishment of a dressing station will not be ordered yet, for there may be no fight, and the regimental surgeons will handle the work at first, in any event. One can be established later if found necessary, probably in Easton.

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General A therefore decides to attack promptly and vigorously, enveloping the enemy's left; to have the artillery take position near the bend of road south of R; to keep the main body of the cavalry on his left; to have the wagon train halt at once and the ambulance company remain in Easton until further orders.

On receipt of the message General A's command was distributed as follows: cavalry main body near O with strong patrols on the other flank; advance guard, 1 platoon cavalry and 1st Infantry (less 3d Bn.), interval between support and reserve 800 yards, between reserve and the main body, 1000 yards. Order of march of main body: 3d Battalion, 1st Infantry—Artillery—2d Infantry—3d Infantry—1st Ambulance Company.

Trains 1½ miles to the rear.

General A on receipt of message at once rode forward to near R accompanied by his staff, Colonel Y, Ist Infantry, Major Z, 1st Battalion, 1st Field Artillery, and sent an aide to direct the commanders of the 2d and 3d Infantry Regiments to report to him. An orderly was sent to the train with orders for it to halt. The advance guard would continue the march to midway between T and S and there halt and close up. The main body would not be halted unless the order was not issued by the time the head of column reached the bridge near T.

By 9.30 General A should be ready to issue verbally his attack order to the assembled officers. The order, if written, would be as follows:

2d Requirement:

Det. 1st Division,
Near Easton, Kansas,
3 June 09, 9-30 A. M.

Field Orders
No. 2

1. A hostile force, estimated at about 3000 infantry, 275 cavalry and two batteries, is taking

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position near 84, a few at the orchard southwest of the crossroads, the greater part being held in readiness nearby. Its train, under escort of about 600 infantry and a few cavalry, has gone to LEAVENWORTH having passed 30 at 8-25. A hostile depot in LEAVENWORTH is being evacuated.

Our division will not reach here until night.

2. This detachment will attack at once, enveloping the enemy's left flank. The role of the advance guard as such will now cease.

3 **a**. The 1st Battalion, 1st Field Artillery, will take position near bend of road about 1000 yards south of R and will at once open fire on the enemy's position at the orchard near 84, making the enemy's artillery the target as soon as located.

b. The 1st Infantry (less 3d Bn.), will make the secondary attack at once, taking position on the ridge south of Q, left on 82—84 road. It will later advance in support of the main attack.

c. The 2d Infantry and 3d Infantry (less 3d Bn.) under Colonel B, will make the main attack and will move along the T—88 road to the creek bottom and thence under cover along south side of creek to near cemetery where it will deploy and advance against the left of the enemy's position.

d. The 3d Battalion, 1st Infantry, and the 3d Battalion, 3d Infantry, under my orders will form the reserve and will at first proceed to a position under cover near southern end of ridge occupied by the secondary attack.

e. The 10th Cavalry (less 1st Squadron) will cover our left keeping strong patrols on our right. It will reconnoiter all roads leading toward LEAVENWORTH and will delay any advance of the enemy from that direction. If a good opportunity offers it will assist

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the attack by opening fire on the enemy's right and rear.

4. Empty battalion ammunition wagons will be sent back to the train to be refilled.

The train will remain where it is.

The ambulance company will await orders in EASTON.

5. Messages will reach me near the reserve.

A,
Brigadier General.

Verbally to colonels of the three infantry regiments, to the major of the artillery battalion, and to the staff. Copy by aide to Colonel X, 10th Cavalry. Order previously sent to the officer in charge of the train.

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PROBLEM 6*

At a River Crossing

FORT LEAVENWORTH FOUR-INCH MAP

General Situation:

Kansas, Red, and Missouri, Blue, are at war. The main armies are facing each other about 15 miles northwest of Atchison. The Terminal Bridge at Leavenworth has been destroyed. Fort Leavenworth is ungarrisoned.

Special Situation—Blue:

Brigadier General A with a force consisting of his infantry brigade, reinforced by the 10th Cavalry (less 3d Squadron), the 1st Battalion, 6th Field Artillery, Company A, 1st Battalion of Engineers and a detachment signal corps, arrived at Beverly March 5th where he received the following order from his division commander:

1st Division, Blue Army,
Kansas City, Mo.,
5 March 09, 10-30 P. M.

To Brigadier General A,
Beverly, Mo.:

Move tomorrow morning with your detachment to Fort Leavenworth and hold the place, covering bridge at that point. Remainder of division now holding this city will be relieved by other troops on 8th instant, and will join you there. Division then to coöperate with main army.

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*Army School of the Line, 1908-9, Course in Tactics—Part IV, Map Problem No. 6.

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Reliable information indicates that the enemy has force south of Leavenworth, probably near Wolcott, consisting of reinforced brigade, which is to move to Leavenworth tomorrow or next day. Enemy has no other troops nearer Leavenworth than his main army.

B,
Major General.

At 9 A. M., March 6th, General A's detachment reached Fort Leavenworth. The cavalry was sent south and in the afternoon came in contact with hostile cavalry, about one squadron, and defeated it near Lansing. Later, contact was gained with a column estimated at 4 regiments of infantry and a battalion of field artillery. The Blue cavalry harassed the march of the hostile force, which, nevertheless, went into camp just north of Lansing.

Shortly before daylight on March 7th, a spy reported that there was a rumor in Leavenworth that a large Red force was in camp east of Big Stranger Creek. General A ordered his cavalry (less one troop) to move at once and investigate this rumor.

At 9 A. M., a report, by telephone, was received from the troop of cavalry, south of Leavenworth, stating that at 8.50 A. M. the head of the hostile column had just reached the Soldiers Home.

At 9.10 A. M., a report received from Colonel C, 10th Cavalry, through signal station on Sentinel Hill, stated that the enemy was moving east in two columns; one on the Millwood Road, estimated at one brigade of infantry, with some artillery, reached 85 at 8.30 A. M.; the other, a stronger column, was just approaching K on Atchison Pike at 9 A. M.; and that he (Colonel C), pushed back by superior cavalry, was retiring on Frenchman.

At 9.10 A. M., General A's force was disposed as follows:

Outposts (connected by wire with General A):

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Cos. A and B, 1st Infantry, at Pope Hill.

Cos. C and D, 1st Infantry, at Long Ridge.

2d Bn., 1st Infantry, just north of Merritt Hill, with one platoon at D.

Main Body:

3d Bn., 1st Infantry, and 2d Infantry, forming in mass on West End Parade; 1st Bn., 6th F. A., forming line of double section columns west of infantry on West End Parade.

3d Infantry, forming in mass on Athletic Field with one platoon near Blunt Hill.

Co. A, Ist Bn. Engineers, resting at Infantry Barracks.

Field trains, wagons parked, teams harnessed, on Main Parade.

Required:

1. General A's orders.
2. Reasons (in brief) for action taken.

Solution, 1st Requirement:

In view of further information, probably soon to be received, and of that which is already at hand at 9 A. M., it will be assumed that General A is near the West End Parade with his staff and the commanders of the various organizations and has imparted to them the situation south of Leavenworth. (Lieutenant Colonel, 1st Infantry, commands the outpost).

To the assembled officers he states, immediately upon reading message from cavalry commander:

> An additional hostile force, probably a division, is advancing from the west along the Atchison Pike and Millwood Road. This detachment will retire at once on Beverly.

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An aide is directed to communicate the following to Colonel C:

> The command will retire immediately across the Rock Island Bridge on Beverly. After destroying bridge at Frenchman's, withdraw and be prepared to cross Rock Island Bridge by 10 o'clock.

A messenger is sent to the commander of the troops south of Leavenworth with the following:

> Detachment retiring on Beverly. Withdraw on Rock Island Bridge via Farragut Avenue. Be prepared to cross at 10 o'clock.

To artillery commander:

> Proceed at once with all haste across Missouri River and take positions north of bridge and near Duck Lake prepared to fire on hostile artillery near Post Garden and Water Works Hill.

To Chief Quartermaster:

> Have trains proceed with all dispatch across the bridge, provisionally on Beverly.

To commanders of infantry regiments:

> The infantry will follow immediately behind the trains, in the order 3d, 2d and 1st, by shortest routes to bridge and cross in double column; clearing the bridge by the H—Beverly Road and the trail immediately to the south.

To commander of engineers:

> Send mounted detachment towards 9 to obstruct road in that vicinity returning to bridge by 10 o'clock. Remainder will follow infantry and prepare eastern end of bridge for destruction.

To commander signal detachment:

> Withdraw your detachment across bridge at once.

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General A then proceeds to the bridge and takes control of the crossing of the command.

2d Requirement:

General A believes there is a division advancing from the west on the two roads named. Adding the force also approaching from the south, the relative strength of Red to Blue would be as follows:

Infantry 13 to 3.
Cavalry 2 to 1.
Artillery 5 to 1.

He realizes it is a hopeless task to attempt to hold Fort Leavenworth, since reinforcements can hardly arrive before the 9th. The artillery of the northern and southern Red columns is what is to be feared. This is certainly preceded in each column by infantry. Even if one battery were with the support of the advance guard of the northern column, and one with the same element of the southern column (which is hardly probable, but the assumption most favorable to the enemy) the artillery in each case could not be nearer than 1000 yards from the head of the leading infantry. The leading infantry of the respective columns, even if unimpeded, cannot arrive at Post Garden (which is the first available position for firing on the bridge) before 9.57; nor near the water works east of Circus Hill before 10.10 A. M. Ten minutes later the hostile artillery of the respective columns might be able to come into action.

As to General A's forces:

Artillery:

It is about a mile from the eastern exit of bridge, and a battalion occupies 930 yards road space. The distance necessary to clear the bridge is about 2700 yards. At a trot this could be done in 15 minutes, or say by 9.26. By 10 o'clock one battery could be at Duck Lake ready to fire, from near the river, on Water Works Hill, which position it would

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enfilade. The other two batteries would arrive much earlier north of the bridge in the edge of the clearing. In both positions the artillery would be well located to take the hostile artillery at a disadvantage. It should fire only enough to accomplish the purpose.

Trains:

There are 100 wagons and 15 ambulances which (at 14 yards each) would occupy 1610 yards of road space, the distance to the eastern exit of the bridge is 1200 yards. The trains should be ready to start at 9.15. At 5 miles per hour, to travel 2900 yards (10 per cent for elongation), would require 20 minutes, or until 9.35. They should be able to follow immediately behind the artillery, clearing the bridge at the latest by 9.40.

Infantry:

Three regiments occupy 2400 yards road space, in double column 1200 yards. Moving by the shortest routes the infantry should be able to follow the trains across the bridge without distance. At 100 yards per minute they could cross the bridge in 16 minutes (400 yards is the length of bridge) or by 9.56. The infantry farthest from the bridge is at Long Ridge, about 1½ miles or 30 minutes marching.

Cavalry and Mounted Engineers:

These may suffer some losses from artillery fire. But after crossing Salt Creek and withdrawing, the hostile cavalry on the west might be almost entirely avoided. The troops on the south may be sharply pursued, but the hostile cavalry would probably advance more cautiously after reaching Circus Hill.

Signal Troops and Engineer Company:

These should be able to withdraw with the infantry and behind it.

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Thus it would seem that General A, by prompt decision and execution, can withdraw his command with virtually little loss, perhaps none at all. The Blue artillery, being in readiness to fire, could promptly engage the hostile artillery and then withdraw after, probably, preventing any fire on the bridge. The bridge should be disabled so as to prevent pursuit, for there would be no object in saving it.

Should the Red troops remain and occupy Fort Leavenworth no Blue troops could of course cross the bridge from the Missouri side. General A feels, however, that if his division commander appreciated the situation at 9.10 A. M. he would quickly order the move which is adopted by General A.

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PROBLEM 7*

On a Flank March

FORT LEAVENWORTH TWO-INCH MAP

Situation:

The Missouri River is the boundary line between hostile states: Kansas, Red—Missouri, Blue.

A battalion of Red infantry with one troop of cavalry is holding the Terminal Bridge. A battalion of Blue militia is at Platte City guarding the bridge at that point.

On December 7th, a detachment of the 1st Blue Division, consisting of the 1st, 2d, 3d, Infantry Regiments, 1st Battalion, 7th Field Artillery, Troop A, 8th Cavalry, and half an ambulance company, under command of General A, is marching by the 76—58—Platte City—1—3—9 road to join the 1st Blue Division, 20 miles north of Tracy. The point of the advance guard has just reached 76, at 8 A. M.

At this time General A, with the reserve of the advance guard, receives the following message from a reliable source:

> A strong Red column is approaching Leavenworth, its head will reach the Terminal Bridge by about 9 A. M. I estimate strength at 5 regiments of infantry, 1 regiment of artillery and but little cavalry.
>
> A spy reports that they camped last night near 98 and this morning received information of your march and orders to move at once and capture or destroy your force.

The weather is cold and clear; the ground is lightly covered with snow. The bridges over the Platte are of iron with wooden flooring.

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*Army School of the Line, 1909-10, Course in Tactics—Part III, Map Problem No. 1.

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Required:

1. General A's march order, supposedly issued before leaving camp 3 miles south of 76.

2. His estimate of the situation after receiving the message.

3. His plan of action.

4. Any orders he may give.

Solution, 1st Requirement:

Det. 1st Div. Blue Army,
X, Missouri,
7 Dec. 09, 6-30 A. M.

Field Orders
No. 4

Troops

a. Advance Guard:
Col. D
1st Inf. (less 3d Bn.)
Troop A, 8th Cav.

b. Main body—in order of march:
3d Bn. 1st Inf.
1st Bn. 7th F. A.
2d Inf.
3d Inf.
Det. Amb. Co.

1. The enemy holds the TERMINAL BRIDGE with one battalion of infantry and one troop of cavalry. Our division is twenty miles north of TRACY.

A battalion of our militia is at PLATTE CITY.

2. We will march today by 76—58—PLATTE CITY toward the division.

3 **a**. The advance guard will clear the northern exit of camp at 7 A. M. The cavalry will patrol to the west observing the country as far as the MISSOURI RIVER.

b. The main body will follow the advance guard at 800 yards.

c. The outposts will stand relieved as soon as the advance guard crosses their line, they will assemble near the road and join the column as it passes.

4. The field train, under Captain Q, 3d Infantry, will follow the main body at a distance of about 1000 yards.

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5. I will be at the head of the reserve of the advance guard.

A,
Brigadier General.

2d Requirement, estimate of the situation after receiving the 8 o'clock message:

General A's mission was to join the division. The new information of the enemy has not changed it, but has made it more difficult of accomplishment. He will endeavor to carry it out and, at the same time, to avoid a serious engagement with a superior enemy.

The report of the enemy's strength and objective he accepts as practically correct. His own strength is as stated.

He finds that the enemy has five regiments of infantry to his three; two battalions of field artillery to his one. In cavalry he assumes the enemy has little or no superiority. General A has the advantage of being in friendly territory, while the enemy, after he crosses the bridge, will be in hostile territory. General A can also count on some help from the troops at Platte City.

The road General A is following is on the east side of an unfordable river with a sheltering ridge between the stream and the road for most of the distance. Near 58 the road is exposed to view and artillery fire from the section west of the river from hill 860, north of 48, to hill 910, south of 48.

Shortly after passing 56 the road becomes fully exposed to view and fire from points on the west bank from 52 north. From Baldwin hill hostile artillery fire could reach General A's road but could not see its target until near Platte City.

The Platte River is bridged at 72, east of 60, near 54 and at Platte City. To the west of the Platte River and south of Tracy—G is a triangle of high rolling ground terminating abruptly on its western edge in a flat open plain extending to the Missouri River. This plain opposite the Terminal Bridge is about two and one-half miles wide.

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There are several roads open to the enemy.

1. 18—22—28—Farley.
2. 18—22—28—30—48.
3. 18—16—12—50.
4. 18—16—12—10—E.
5. 18—16—G.

All these roads necessitate the enemy's crossing the open flats between the Missouri River and the high ground to the west.

General A sees that if he could reach in force the western edge of the high ground opposite the terminal bridge before the enemy his problem would be easy but he also sees that this is probably impossible.

He figures his column as follows:

Troops:

Infantry brigade, less field train,	2500 yards.
Battalion Field Artillery,	930 yards.
One-half ambulance company,	150 yards.
Distances in column,	1750 yards.
Total,	5330 yards.

This does not include the cavalry, as it should not be in the column.

Trains:

Infantry brigade,	700 yards.
Artillery battalion,	320 yards.
Cavalry troop,	40 yards.
Total,	1060 yards.

On the receipt of the message at 8 A. M., with his point at 76, the tail of his column had not yet left camp. A message would be sent back at once directing the trains to follow the main body without distance. If this were done the total length of his column from the point of the advance guard to the last wagon would be 6390 yards. The weather is

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cold and clear which tends to accelerate the rate of march; the column is long which has an opposite tendency. The little snow on the ground will have no effect. By 8 A. M., there should be little or no elongation. General A would at once take measures to keep it at a minimum.

General A believes he can make, for the next two hours, at least 3 miles an hour. If he fails to make it the enemy is much more likely to fall short of it, as he will be in hostile territory and more or less feeling his way. Moreover, greater exertion can generally be obtained from a man trying to avoid his own destruction than from one who is trying to destroy. General A can therefore figure on the basis of 3 miles march per hour for himself and the enemy and feel quite certain that he will come nearer to making it than the enemy. General A is, then, safe in calculating that his column will pass a given point in one hour and twenty minutes assuming his total length of column to be 7040 yards.

The enemy's probable intention is first of all to cut General A off from his division and then to force a fight on favorable terms. How can General A best defeat these intentions?

To gain the ridge southeast of 12 with artillery in advance of the enemy would solve his problem; but, as it is over six miles from 76, the enemy would beat him there. General A could start for that place and fight where he must, probably near 50, but he rejects that plan; for the enemy, once on the ridge, could envelop General A's right by extending to the north, and not only cut him off from the road through Tracy but force him to fight with his back to an unfordable river. In such a fight against greatly superior forces General A would be completely ruined.

Another plan would be for General A to move for a point on the western edge of the high ground south of 12 to stop a hostile crossing. But General A finds that impracticable. If he starts immediately, the point of his advance guard could reach a point just north of 46 as the enemy

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begins crossing the bridge, but before General A could bring effective fire to bear on the bridge the enemy would have enough men across to secure the crossing of the rest and the point of his advance guard would meantime be very near 14 and General A would find himself cut off from Tracy.

Any plan of sending a flank detachment of infantry and artillery to march on the west bank of the Platte is promptly rejected. Such a flank guard would be widely separated from the main body with an intervening impassable obstacle and, besides, it could not reach a point where it could be effective in stopping the enemy, any more than could the main body itself. The enemy is strong enough to be able to mask such a detachment and keep right on toward the main body with his main force.

If the enemy advances by way of Farley, General A can ignore him. The enemy can reach Farley only after 11 o'clock and the tail of General A's column at 11 o'clock will be near 56.

If the enemy advances by the second route the point of his advance guard would be between 48 and 60 at 11 A. M., still far behind General A. The enemy will not be likely to move by these roads.

The other routes need close examination.

The head of General A's column will cross the bridge at Platte City at 10.40 A. M. and the tail of his column can cross by noon. If the enemy moves by route 5 he will reach D with the point of his advance guard at 11.40, too late for him to do much damage, and if he takes a route farther north he will gain nothing thereby.

By either of the other two routes the point of his advance guard could be east of 52 at 11 A. M.; this point will undoubtedly be his objective.

General A thus estimates his problem to be one of covering a crossing with a detachment. He must be able to gain a point where he can keep the enemy beyond effective

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artillery range of the vicinity of the Platte City bridge until his column has passed there.

He sees that posting infantry south of the 2—4 line, and supporting it by artillery west of B, will give him the desired protection. But the point of his advance guard can reach this position only by 11.20 and the point of the enemy's advance guard can reach there at 11 A. M. By having his artillery trot out and join the advance guard General A can get it in position before the enemy can his, General A can have an artillery officer go on ahead to prepare for the batteries while the enemy, it is proposed, shall have no such privilege.

General A counts, moreover, on delaying the march of the enemy. The latter will be in hostile territory and the Blue cavalry will at once be ordered out to prevent reconnaissance by the enemy and to delay him as much as possible. General A also decides to have the troops at Platte City move out at once and take position south of the 2—4 road.

These troops may be counted upon to cause enough delay to enable General A to get his artillery in position and support it with his advance guard. By 12 noon the tail of his column will be across the bridge and the retreat then can be begun.

As it takes considerable time for a force of the size of the enemy's to deploy and again to form in march column, General A feels confident that he can withdraw without much difficulty. He can march as fast as the enemy can.

General A therefore decides: to take his cavalry at once from the advance guard and make it independent with orders to seek the enemy and delay him; to continue his march on the present route having the trains follow without distance; to make special efforts to expedite the march and to prevent the lengthening of the column; to order the artillery to trot on ahead and join the advance guard, sending an officer forward to reconnoiter a position southwest of Tracy;

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to send his best lieutenant colonel to hurry forward to Platte City to take command of the first line of defense and place the troops already there in position; to destroy, at least partially, the bridges on the 60—58 and 54—56 roads.

3d Requirement, plan of action:

To take up a position southwest of Tracy to cover his crossing at that point. To send Lieutenant Colonel E forward to command the troops already there and the artillery and later to reinforce him from the advance guard as may be necessary. After crossing, if necessary, to take up a second position with the main body north of Tracy to cover the withdrawal of the advance troops and allow the trains to gain the lead.

4th Requirement, orders and messages:

(The information of the enemy is communicated as the first part of each message but is not given here.)

To Colonel D:

[Information.]

The cavalry is made independent and taken from your command. The artillery will close up on the advance guard and, at your first halt, allow it to close up to just behind the support. Push the march.*

By messenger to Captain Q:

[Information.]

Have the trains kept well closed and follow main body without distance.

To Captain F, 8th Cavalry:

[Full information and general plan.]

Move at once toward the enemy, delay him all you can, falling back when necessary toward Tracy.

*Colonel D is not ordered to reinforce Lieutenant Colonel E. General A will himself give that order later if found necessary.

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To Major B, 7th Field Artillery:

[Information and general plan.]

Trot ahead to advance guard, and, at first halt of the reserve, pass it and close up on the support. Send an officer to report to Lieutenant Colonel E and then to go through Platte City to reconnoiter a position for the batteries. Lieutenant Colonel E will command west of Tracy until my arrival.

To Colonels G and H of 2d and 3d Regiments of Infantry:

[Information and instructions to take every precaution to prevent lengthening the column.]

To Lieutenant Colonel E:

[Full information.]

Proceed at once and rapidly to Platte City and assume command of battalion there; the artillery has been ordered to report to you. Select a position to the southwest of Tracy where you can prevent the enemy's taking a position to block our crossing the bridge at that place. I will reinforce you with troops from the advance guard as may be found necessary.

[A written message would also be sent to the commanding officer of the battalion at Platte City.]

To Colonel G, 2d Infantry:

Send a mounted officer of your regiment and 8 mounted orderlies to proceed rapidly to the bridge on the 54—56 road and render it unserviceable. They will take tools from your ammunition wagons. If they find it will require too much time to tear out the planking they will collect brush and fence timber and burn it so as to destroy the flooring of the bridge. On completion of this work they will rejoin you.

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To Colonel H, 3d Infantry:

[The same order relative to rendering unserviceable the bridge on the 60—58 road.]

To the division commander:

[A message reporting the situation.]

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PROBLEM 8*

Attacking a Covering Detachment

FORT LEAVENWORTH TWO-INCH MAP

Situation:

A Blue reinforced brigade, operating in friendly territory, late on January 5 defeated an inferior Red force eight miles north of Weston and at once took up the pursuit, the Red force retreating toward Farley.

At 8.30 A. M., on the morning of the 6th, General A, commanding the Blue brigade, learned that partisans had blown up the bridges over the Platte from Platte City to Farley, inclusive, and that a large convoy was parked near Farley and 60; also that the enemy was repairing the bridges at Farley and 60 as rapidly as possible, but that it would require three or four hours to complete the work.

General A estimated that in the fight of the day before the enemy had about two regiments of infantry, two batteries of field artillery and a troop of cavalry.

General A's force at this hour was on the 29—21—E road disposed as follows:

Advance guard: 1st Infantry and Troop A, 1st Cavalry; point of advance guard at E. Cavalry in front and to the west.

800 yards distance.

Main body in the following order: 1st Battalion, 2d Infantry; 1st Battalion, 7th Field Artillery; 2d Infantry (less 1st Battalion); 3d Infantry; 1st Ambulance Company.

One mile distance.

Trains.

*Army School of the Line, 1909-10, Course in Tactics—Part III, Map Problem No. 5.

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The cavalry reported the enemy in position along the 12—50 road.

General A continued his march to near Ode, caused the column to close up, except the trains which were halted, and ordered an intensive reconnaissance by patrols.

By 9.30 A. M., General A had carefully studied the country in his front. Reconnaissance had developed the fact that the enemy had troops at Baldwin, on the hills south of 12, and along the 12—50 road, no point apparently held in force. Efforts to get a view in rear of this line were futile.

Required:

1. General A's estimate of the situation.
2. His orders.

Solution, 1st Requirement:

General A's mission is to capture or destroy the hostile force in his front. Yesterday he defeated it in battle; today the full fruits of victory must be gathered. The convoy parked near the river should be a part of his reward.

General A's force is as stated in the problem. The morale of the troops should be excellent as the result of the previous victory and pursuit. They are in friendly territory and fighting an invader which undoubtedly will still further tend to improve their fighting quality.

The enemy had yesterday two regiments of infantry and two batteries to General A's three of each. In cavalry they were equal—one troop each.

The enemy could scarcely have received reinforcements of any consequence without General A's learning of it, as the Blue partisans are evidently both active and resourceful, to judge from results, and as the inhabitants are friendly. The hostile force undoubtedly has suffered in morale from its defeat and trying retreat. The relative losses in the previous engagement are not known. While the attackers generally lose the more heavily during an attack, yet if victorious, this

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is usually more than compensated for by the losses inflicted subsequently on the defeated retreating force.

If the enemy puts into action nearly all his force his withdrawal will be almost hopeless. In this General A has an advantage.

General A's fighting efficiency, considering morale and numbers, as compared with the enemy's, is probably better than 3 to 2.

The information General A has of the enemy shows him to be holding a line from Baldwin's to the hill south of 12 but nowhere in force. This line is about 3000 yards long and out of all proportion to the enemy's strength; but undoubtedly he is holding the line just strongly enough to prevent reconn aissance and is keeping his main body to meet an attack wherever it may be made.

The enemy is in a critical situation. Having been defeated yesterday and forced to retreat, his route has led him into the narrow angle between the Platte and the Missouri. At the decisive moment Blue partisans have destroyed the bridges over the Platte and until they are repaired he has *no* line of retreat. After the bridges are repaired he has a large convoy to cross which, if it is to be saved, must precede the troops. The bridges will be repaired about noon. The enemy must hold General A back until the repairs on the bridges are completed and he can withdraw, defeat General A in battle, or else be ruined. If he becomes closely engaged before the bridges are repaired his retreat will in any event be very costly.

General A appreciates all this and realizes that only by being defeated or by being too slow can he fail to ruin the enemy. Under the conditions he believes his superiority sufficient to warrant an attack.

The terrain as it affects this problem consists of a rough plateau bordered on the east by the unfordable Platte River. On the west the high ground terminates abruptly in a low plain from 3000 to 5000 yards wide extending to the Missouri

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River. If either opponent should quit the high ground for the flats it would place him at a decided disadvantage relative to the other holding the ridge. We need then consider only the high ground. A little south of the 12—50 road the high ground is about 3500 yards wide; at other places it is slightly narrower. It is cut up by ravines and knolls. The 50—48 road is the enemy's best line of retreat if the bridges are repaired in time.

Across the front now held by the enemy is a deep ravine decidedly favorable to him. Its northern slope is very steep and broken by cross ravines while the southern slope is much more gentle and would be almost a glacis slope if the enemy properly placed his troops.

The Baldwin hill is a strong point. From it the country to the north can be well searched. It is too close to the river to permit of its being turned. The hill south of 12 is the highest point on the line and commands the road south of 50 and the ridge to its east. From that hill there extends to the south a ridge easily traversed while the ground to the east of it is very broken. West of the 10—12 road the ground is broken, a ravine running southwest from 10 being its principal feature. In advancing from the north a ravine has to be crossed to reach the hostile position except along the 10—12 road.

General A having determined to attack has gone forward to get as good an idea as possible of the country. The question now is to determine the best way to attack.

Four courses present themselves:

1st. To turn the position from the west. This is utterly impracticable. It would take too long, and a few troops with a battery on the ridge between 30 and 42 would have him at too great a disadvantage.

2d. A direct frontal attack. The advantages are that, it is simple and can be quickly started. The troops can be moved under cover as far as the 10—52 ridge and there deployed and launched to the attack unseen until they top

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the ridge. The disadvantages are: that the ravine to be crossed, steep on the far side with gentler slopes on the near side, favors the enemy; and that General A dares not leave Baldwin out of his plan in this case for he will be enfiladed from there if he does, while, if he includes it in his attack, his line will be too long, or it will develop into an attack on the enemy's right—to be considered next.

3d. An attack on the enemy's right. The disadvantages of this are: the strength of the Baldwin position fire from which commands the country from the Platte well to the west; the ravine to the north and east of the road would be considerable of an obstacle; the enemy, on the 880 contour, would be very difficult to dislodge; to attack the hostile right would take more time and time is an important factor; the enemy driven from Baldwin would undoubtedly have held a force on the hill southwest of 50 to cover the retreat. This latter force would be difficult to dislodge and other good positions suitable for delaying actions are located in rear. By this form of attack the enemy would be pushed slowly back toward his bridges by the direct route; a route along which there are good deploying positions. In dealing with a defeated enemy, the more complicated you can make his withdrawal, the more costly you will make it for him since his troops under such conditions are handled with great difficulty; if they have to retire to a flank it is greatly to your advantage.

4th. An attack on the enemy's left. The advantages are: it is the nearest to the present position of the Blue troops, hence can be more quickly started; if successful General A gains the commanding ridge south of 12 and forces the enemy to an eccentric retreat—General A can then, by extending to the south, force the enemy into a fight with his back to the Platte and render his final withdrawal across the bridges very difficult it not impossible—it gives more cover for the infantry advance, and better fire conditions. The

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disadvantages are: the possible enfilade fire of the hostile artillery and having to advance from the ravine.

Good artillery positions are available for an attack on either right, left or center. The best positions are about equally good for all three forms of attack.

The positions considered by General A are: the little hill about 500 yards west of 10, near Tomlin, hill 900 southeast of Ode, and the hill south of Ode. The first is easily reached and the ranges are short. The objection to it is that it would be a very conspicuous land mark and is in extent just about sufficient to cover the battalion. The enemy would have too good a target. The second is equally easy to reach; the ranges are about the same; the command is a little less; but the position is less conspicuous and the enemy would have difficulty in locating the artillery as an objective. South of Ode, on either side of the road, are good positions easily reached at ranges from the enemy under 3500 yards. If the enemy's left is to be attacked a position east of the 10—12 road has advantages.

The hostile left seems to offer the most advantages for the attack and General A now considers in detail his method.

He feels that the enemy will be in his front wherever he attacks. Where will the enemy place his artillery? General A does not believe he will place it on his left as it would be difficult for it to withdraw from there. The bulk of the infantry will probably be in his front, the artillery farther to the east.

The ravine running southwest from 10 will afford the attacking troops considerable cover from view and fire from troops south of 12 or in that vicinity. The first or northern part could be enfiladed by artillery from the hill south of 12 but General A does not believe there will be any artillery there. If there is, that distance must be crossed by taking the branch of the ravine farther to the west. From Cecil a column can move to where the ravine bends south then face to the left and attack up the slope toward 12 and toward the hill south

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of 12. This movement could probably only be made under cover of the fire of the artillery, and the fire of other troops advancing along the 10—12 ridge.

If the enemy forms a line near 12 to face the attack from the ravine it will be practically enfiladed by the artillery and by the other infantry attack. If he forms a line facing north a little south of 12 his left flank will be very weak, the woods will conceal the attackers, and the ravine extending northwest from 12 will be an advantage to the attackers. The fire from the north across the 10—12 ridge must be heavy.

General A appreciates the danger of enfilade fire from the hostile artillery on his secondary attack if the hostile guns are near Baldwin's or 50, but he counts on his superiority in artillery and on cover in the ground from fire from that direction to save him.

How shall he use his cavalry and how protect his flanks are the next questions. The country on the east is broken and harder to watch than the flats west of the bluff. The cavalry can, therefore, find suitable employment in observing on the east while a small infantry force on the ridge west of the ravine can overlook the flats to the west. If this right flanking group is reinforced by machine guns it can move down this ridge and may be able to do effective work at a critical moment in the attack. General A does not order the machine guns there, however, but simply orders this flank protected or watched and leaves it to the Colonel, 2d Infantry, to determine the advisability of sending them there.

At present General A sees no necessity for establishing a dressing station but decides to await developments. There may be no fight of any consequence.

General A therefore decides: to attack the enemy's left, sending the 2d Infantry by the ravine southwest of 10, the 1st Infantry along the 10—12 ridge and holding the 3d in reserve; to place his artillery south of Ode. As the machine guns of the 2d Infantry may possibly be used to advantage

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from the west side of the ravine they are left with that regiment.

The heaviest possible fire is desired from the direction of the secondary attack (1st Infantry) at the moment when the 2d starts forward from the ravine, and it may also be necessary before that in defense. The machine guns of the reserve are therefore attached to the 1st Infantry. The trains are to be left where they are and the ambulance company to halt at Ode.

At 8.30 A. M., the point of the advance guard was at E, head of main body was about 2800 yards in rear, or 3800 yards from Ode. During the hour to 9.30 the main body would have closed up and, if the troops were massed as they came up, the 2d Infantry would be nearly up; if they remained in column of squads the head would be at Ode.

General A had assembled his staff, the regimental commanders and the artillery commander at the head of the column and, at 9.30 A. M., issued the following order which, if written, would be in this form:

2d Requirement:

1st Brigade, 1st Division,
Ode, Missouri,
6 Jan. 10, 9-30 A. M.

Field Orders
No. —

1. The enemy, defeated by us yesterday, is occupying the line from BALDWIN to the hill south of 12. He has a large convoy parked near 60 and FARLEY. The bridges over the PLATTE RIVER have been destroyed from PLATTE CITY to FARLEY inclusive. The enemy is repairing the lower two. This work will require two or three hours.

2. We will attack at once, enveloping the hostile left. The role of the advance guard ceases.

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3 **a**. The 1st Battalion, 7th Field Artillery, will take position about 500 yards south of here and at once open fire on the enemy's position making his artillery the target as soon as developed.

b. The 1st Infantry will advance against the enemy along the 10—12 road supporting the attack of the 2d Infantry; the machine gun platoon, 3d Infantry is attached to this regiment.

c. The 2d Infantry will advance under cover to the ravine near MEAS thence along this ravine until the head of the column reaches point where the ravine bends south and from there vigorously attack the enemy's left.

The colonel commanding will send a small detachment to the west of the ravine to cover our right flank.

d. The 3d Infantry will constitute the reserve under my orders. It will for the present take position under cover west of 10, sending its machine gun platoon at once to report to the commander of the 1st Infantry.

e. The cavalry will cover our left flank, sending a strong patrol to the west and south.

4. The trains will remain where they are.

The ambulance company will take position for the present near ODE.

5. Messages will be sent to the station of the reserve.

A,
Brigadier General.

Verbally to the regimental commanders, Major B, 7th Field Artillery, officer in command of ambulance company and the staff; by an aide to the troop commander.

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PROBLEM 9*

As Escort to a Convoy

GETTYSBURG GENERAL MAP, HUNTERSTOWN, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

A Blue southern army has invaded the Red territory, and on August 31st is near Carlisle, running short of ammunition. Railroads as far south as the Potomac are all broken.

A convoy of 200 wagons loaded with necessary ammunition, under escort of General A and his command, is moving north by the Taneytown Road through Gettysburg. General A's command consists of the 1st, 2d and 3d, Regiments of Infantry, 1st Battalion, 4th Field Artillery, 1st Squadron, 5th Cavalry, Company A, 1st Battalion Engineers, and the 1st Ambulance Company. General A's command camped the night of August 31st—September 1st as follows:

> 1st Infantry and one-half of Troop A, 5th Cavalry, in the northwestern angle of the roads near Geo. Spangler, furnishing the outposts.
>
> The artillery west of Taneytown road near and south of J. Musser. The cavalry on the opposite side of the Taneytown road from the artillery. The ambulance company and engineer company just north of J. Musser. The 2d and 3d Regiments of Infantry about 600 yards southwest of J. Musser. Train parked near E. Weikarr.

The command was ordered to be ready to march at 6 A. M., September 1st; the commanders of infantry regi-

*Army School of the Line, 1910-11, Course in Tactics—Part II, Map Problem No. 1.

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ments, cavalry, artillery, engineers, ambulance company and train to assemble at the J. Musser house at 5.30 A. M.

At 5.20 A. M. an officer's patrol reported a Red force, estimated at between one and two brigades of infantry, a battalion of field artillery and some cavalry, in camp near Square Corner on the Hanover Road.

A spy reported that he had been in the enemy's camp and heard the men discussing their march. He reported that there were five regiments of infantry, three batteries of field artillery, and two troops of cavalry, that they were to start for Gettysburg at 6 A. M., to intercept General A's command.

Required:

1. General A's estimate of the situation.
2. General A's orders.

Solution, 1st Requirement:

General A's mission is to get his convoy safely to his army near Carlisle and its importance is sufficient to warrant a heavy loss in men if necessary. That the main army shall be able to win its battle is of much more importance than General A's brigade.

From the information received from the spy, which is practically confirmed by the officer's patrol, he finds himself seriously outnumbered in infantry in the proportion of five to three, equal in artillery, but superior in cavalry, having four troops to the enemy's two. The enemy has a decided advantage in strength and, besides, General A is hampered with the large train of wagons, the safe march of which to Carlisle is his main object.

While the inhabitants are hostile to the Blues, the enemy is operating in friendly territory; another advantage to him. Information as to the country and even as to General A's movements will be easily obtained and the enemy probably already knows his strength. The enemy, also, is not ham-

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pered with an unwieldly train and, if defeated, can retreat in almost any direction with his command. Under the conditions there can be no doubt as to the enemy's action. He will move against General A's command without loss of time.

The wagon train of General A including his field train and convoy is:

Field train,	85	wagons.
Ambulance company,	15	wagons.
Convoy,	200	wagons.
Total,	300	wagons.

As the road is rolling, an allowance had better be made of 20 yards per wagon or 6000 yards for the train, or 3.4 miles. Regarding the rate of march we must assume that General A's unwieldly train will march considerably slower than the enemy, even if unopposed.

If the enemy moves by the roads south of the Hanover Road, the distance from Square Corner to where he could strike General A's route is about eight miles. He will not do that as the tail of the train would be nearly four miles past the point where the enemy would strike the Taneytown Road before he reached it.

If the enemy moves by the Boneauville—Hunterstown road to strike the Carlisle Road north of Gettysburg the distance would be ten miles. From the camp of the train to this point is seven and one-half miles, length of train 3.4 miles; the enemy could there strike the train, if not delayed in his advance.

From Square Corner to Benner's Hill is 6 miles and to Wolf Hill ridge 5 miles. From where the train is in camp to beyond effective artillery range on the Carlisle Road from Benner's Hill is about 5 miles. Length of train 3.4 miles. If not delayed, the enemy has his best chance by this road. To move by the Hanover Road is the simplest, most direct plan for the enemy and the one he is most likely to adopt, although he could go north by Hunterstown with good

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prospect of success. General A can feel certain he will not move to the south.

The terrain is rather favorable to General A. His road is direct and good. Soon after starting he will have the Wolf Hill range of wooded heights between him and the enemy. The enemy has three main roads of approach through or around this obstacle; the Baltimore Pike, the Hanover Road and by Hunterstown. For the reasons given above he is not likely to use the Baltimore Pike. A movement across country between the Baltimore Turnpike and Hanover Road is impracticable, for a large force, as is the country immediately north of the Hanover Road.

If the enemy advances by the Hanover Road he must pass the wooded Wolf Hill ridge to reach Gettysburg. From the top of this ridge he is within artillery range of General A's route, though the trees may interfere with fire to some extent. Less than a mile west of this ridge, or six miles from Square Corner, is Benner's Hill, which completely commands, at short artillery range, General A's road.

General A realizes that if the enemy advances by the Hanover Road, he must hold him west of the wooded ridge until the trains have passed Gettysburg.

If the enemy advances by Hunterstown there is a ridge 592—586, east of and nearly parallel to the Carlisle Road, which must be held until the trains are past. The distance from Square Corner to this ridge is about nine miles and the trains of General A have about the same distance to go to reach a point on the Carlisle Road beyond artillery range.

From the 2d Infantry's assembly point, by the road branching from the Carlisle Road about 2½ miles north of Gettysburg and passing through Table Rock, to the ridge in question, is about 8 miles.

Just west of Wolf Hill ridge a country road crosses the Hanover Road running nearly north, thence northwest to

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the Carlisle Road. It would be available for the withdrawal of troops

The courses open to General A, if he is to carry out his mission, are few:

If he retires to the south he can save his command and convoy but he abandons his mission.

If he takes up a defensive position to cover his convoy he also abandons his mission; for the enemy, with his superiority of force, would certainly block his road to the north, if he did not capture him.

He then considers marching north with the bulk of his command and trains, sending a flank guard to move north by McAllister Hill and the country roads east of Rock Creek and west of Wolf Hill ridge and later to return by cross roads to the Carlisle Road and follow the command.

This course has the advantage of interposing a force between the column and the enemy, but has the disadvantage of practically limiting the force to infantry, as Rock Creek must be forded, the roads are not good and in many places rough country must be crossed where there are no roads. The flanking party's march would be slow and delay the column.

General A next considers sending his 1st Regiment by Wolf Hill to the Hanover Road on the eastern slope of the ridge, artillery by Gettysburg to Benner's Hill; starting the trains as soon as possible, preceded by the 2d Infantry and followed by the remainder of the infantry and the ambulance company; the bulk of the cavalry taking the same route as the artillery, but pushing on and gaining contact with the enemy and determining his action.

The advantages of this course are that if the enemy advances by the Hanover Road the 1st Infantry will be there in ample time to meet and oppose him, taking a position on the secondary ridge in front, east of the Wolf Hill ridge; that the artillery will be near enough to support the infantry, for the cavalry will give warning in time for it to move into

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position; that in such a position the necessary delay can be gained; and that the 3d Infantry can be turned off to the east to assist in covering the withdrawal, the withdrawal being favored by the terrain. The cavalry, being superior to the enemy's cavalry can promptly gain contact and find out the route taken by the enemy.

If the enemy moves by Hunterstown the 2d Infantry (less one battalion) will take the right hand fork of the road two and one-quarter miles north of Gettysburg and beat them to the ridge 592 on the Hunterstown Road and there have a good position to delay the hostile advance. The artillery could promptly move to its support from the first artillery position.

The disadvantages of this course are that the artillery may have to be moved at a rapid gait, possibly a long distance, and the necessity of somewhat delaying the cavalry reconnaissance by requiring it to cover the initial march of the artillery. Neither can be avoided if this plan is followed. General A decides, nevertheless, that this is the best plan.

Some cavalry must accompany the trains. For this purpose it is better to use the cavalry now with the outpost. The leading regiment of infantry can get along with its scouts. Owing to the length of the trains a force of infantry, or troops acting as such, must be told off for their immediate protection to march near the center. This may be relatively small, as we have a large force at both head and rear, and the enemy's cavalry force is small. If the enemy's infantry gets at the trains, all is practically lost, anyway. The field trains have their own protection, so this force is placed in the center of the convoy. The convoy also has armed men with it, but probably not in the same proportion as in the field trains.

General A therefore makes the following decision:

To send the 1st Infantry at once by McAllister Hill—

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Wolf Hill to a point a little east of roadfork 550 on the Hanover Road.

The artillery by Gettysburg to Benner's Hill, escorted by the cavalry; movement to be made at a trot; artillery to await orders at that point; cavalry to push on and gain contact with the enemy.

The 2d Infantry to move at once through Gettysburg on Carlisle, followed by the trains, ambulance company, 3d Infantry.

The half troop of cavalry now with outpost to report to commander of train.

2d Requirement:

The officers having assembled at the prescribed time, the following order is dictated to them:

1st Brigade, 1st Division,
2½ Miles South of Gettysburg on the Taneytown Road.
1 Sept. 10, 5-30 A. M.

Field Orders
No. —

1. It is reliably reported that a hostile force of all arms is at SQUARE CORNER.

There is no change as to our main army.

2. This command will continue its march on CARLISLE.

3 **a**. The 1st Infantry will move at once by MCALLISTER HILL to the roadfork 550 on the HANOVER ROAD, a short distance east of the ridge, as a right flank guard. It will be supported by the artillery if necessary. This force will cover the column from any advance of the enemy along the HANOVER ROAD.

b. The 1st Battalion, 4th Field Artillery, escorted by the cavalry squadron will move as soon as practicable, not later than 6 A. M., by GETTYSBURG to where

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the HANOVER ROAD crosses BENNER'S HILL. The movement will be made at as rapid a gait as practicable.

c. The 1st Squadron, 5th Cavalry (less ½ Troop A) will move as soon as practicable, not later than 6 A. M., by GETTYSBURG and the HANOVER ROAD toward the enemy. They will escort the artillery battalion as far as BENNER'S HILL and then push on east, gain contact with the enemy, determine his line of march, and delay him as much as possible without becoming seriously engaged. The march will be made at as rapid a gait as practicable.

The half troop, Lieutenant K, now on outpost will report to Colonel Y.

d. The main column under command of Colonel Y will, as soon as the artillery has moved out, march in the following order: 2d Infantry (less one company). Company A, 1st Battalion Engineers, 1st half of convoy, one company, 2d Infantry, 2d half of convoy, field trains, ambulance company, 3d Infantry.

The column will march through GETTYSBURG on CARLISLE.

The march will be expedited as much as practicable until head of column reaches BIGLERVILLE.

4. Messages will be sent to BENNER'S HILL until further notice.

A,
Brigadier General.

Dictated to the colonels of the three infantry regiments, the majors commanding the artillery battalion and cavalry squadron, Captain M of the Engineers, Lieutenant K, and the staff.

N o t e : General A in his first order says nothing of the proposed use of the 2d and 3d Regiments of Infantry and

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of the artillery. His first care is to get the trains moving and additional orders will be given as demanded.

In this case he turns the command of the main column over to Colonel Y. General A should hurry forward to Benner's Hill to direct affairs there.

In the order directions to "move as soon as practicable not later than 6 A. M.," are given. This may appear contrary to general rules but it is believed justifiable in this case.

The hour set was 6 A. M., half an hour hence. If the artillery can get out a little earlier so much the better.

As rapid a gait as practicable is prescribed for the cavalry and artillery. This also is believed justifiable here. General A could prescribe the trot but the officers of the mounted arms present with the column are the best judges of the practicability of trotting on parts of the route. They are given clearly to understand that they are wanted to push the march and can be trusted to do it wherever practicable.

It is not believed necessary to mention in the order the relief of the outpost as the regiment furnishing the same is ordered to move at once, and the colonel will arrange his own column.

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PROBLEM 10*

On the Flank of the Army

GETTYSBURG GENERAL MAP, NEW OXFORD, BONEAUVILLE AND GETTYSBURG THREE-INCH SHEETS

Situation:

An Eastern field army, in hostile territory, is advancing on Gettysburg. Brigadier General A, commanding the 1st Brigade, 1st Division, of this army, to which is attached the 1st Squadron, 4th Cavalry, 1st Battalion, 2d Field Artillery, and 1st Ambulance Company, has been detached on a separate mission.

At 9 A. M. on September 1, General A, on the march to rejoin the army, is halted at the Kilpatrick S. H., covered by his cavalry. At this time General A receives the following messages:

1st Squadron, 4th Cavalry,
1½ Miles North of Boneauville,
1 Sept. 10, 8-50 A. M.

To General A:

Encountered enemy near here, drove in his cavalry and found force of all arms going into position across the KILPATRICK—BONEAUVILLE road on ridge 613 about one mile north of BONEAUVILLE.

Estimate hostile force at about 2000 infantry, two batteries, and not more than a troop of cavalry.

D,
Major, 4th Cav.

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*Army School of the Line, 1910-11, Course in Tactics—Part II, Map Problem No. 5.

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1st Eastern Field Army,
Near Two Taverns,
1 Sept. 10, 8-15 A. M.

Brigadier General A:

This army will probably be attacked this morning; our line extends from near TWO TAVERNS to the southwest.

The general commanding directs that you move promptly and come in on enemy's left.

X,
Chief of Staff.

Heavy artillery fire has been heard from the direction of the south since 8.30.

Required:

1. General A's estimate of the situation.
2. General A's orders.

Solution, 1st Requirement:

General A's mission is to aid in the main fight. He bears clearly in mind that if the Eastern army wins the main fight his detachment battle has no value except as it has aided to that end. If his army is defeated and driven back, General A will have to go with it, no matter how successful he may have been locally. The detachment of this brigade was probably made for some necessary reason before the battle was believed imminent. It is now directed to come in on the enemy's flank. A complication has arisen. General A's direct road is blocked by a force of the enemy. How is his mission to be accomplished?

The enemy is in friendly territory and probably is well informed as to General A's movements. This probably accounts for the hostile detachment: a weaker force sent to keep a stronger out of the battle. Compared to this hostile detachment, from the report of his cavalry, General A has a

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superiority in force, nearly double in infantry, 3 to 2 in artillery and 4 to 1 in cavalry.

The Eastern main army is evidently inferior in some way or it would not likely be expecting an attack. The help of General A's command is probably needed. From the heavy artillery firing heard to the south General A knows the battle is on, the enemy has attacked.

The hostile detachment has an advantage in that it need not win the fight to fulfill its mission. It wins if it can merely keep General A out of the fight. On the other hand General A, to accomplish his mission, must get into the main battle and help there.

Now what will the enemy presumably do? At present his command is probably 2½ miles to the south practically in a position of readiness; prepared to do its utmost to block the road of the Eastern detachment to the main battle.

If General A continues his advance the enemy will fight on the ridge where he now is. If General A tries to turn him by moving to the west by the Guldens—Salem Church road, he will have to march nearly 5 miles to get opposite where the enemy now is and the latter, by moving a little more than a mile, will be in position to flank the road, while moving a mile and a half will put him across it. The fight would still have to come; but an hour or more would be lost and nothing gained.

If General A turns the enemy by making a wide detour to Grant Hill, the enemy by moving to Mt. Vernon S. H. still has the much shorter line if he cares to block the march. This latter movement would take so much time as to be unwise and would be dangerous in the extreme as General A stands a chance of having the main fight so far decided by the time he gets there that they can detach against him and capture him. The enemy in this case might let General A make the march and himself move directly against the right flank of the Eastern army which he could strike more than an hour before General A could strike the enemy's left.

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If General A moves east to turn the enemy, the latter will probably be in front of him if the turn is not wide; if it is wide the enemy will not risk trying to get in front of General A but will promptly strike for the right flank of the Eastern main force, as he would be there an hour or more before General A could be up, and would thereby gain a decided advantage.

General A sees no profit in trying to turn the enemy and avoid a fight. His mission is to aid the main army. To do his he must first defeat and drive off the detachment in his front and this now becomes his primary mission.

Terrain:

Moving directly against the enemy a skirmish line, if not too long, would find considerable cover in the numerous folds in the ground. To the west the ground is rough, cut by many small streams and dotted with small woods. Artillery would there have to keep mainly to the roads to get into position. The roads in this district are generally exposed to the view of the enemy but the artillery can gain unseen a position north of hill 593, near the R. F. Weaver place, by moving off the roads a considerable distance, though over practicable ground.

The wooded ravines south of the hill, above mentioned, run north and south and would split a line of attack from this direction. An attack from the west would have to cross nearly a mile of very exposed ground. To the east the ground is less broken.

By following round the 560 contour to near Cedar Ridge, troops will have but little more than a mile to march before an artillery position is reached opposite the salient in the ridge held by the enemy. This route, while off the roads, is perfectly practicable for infantry and artillery. For the infantry attack, deployment could be made behind this ridge, and the advance after coming into view would be relatively short. The right of the line would have to cross the head of

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the wooded stream but this probably would give as much advantage to the attack as to the defense.

The roads also lend themselves to an envelopment of this flank.

General A's mission being to drive off this force in his front, and to do so as quickly as possible, he has now to determine the best way to accomplish this. Wide turning movements have already been discussed.

The advantages of a direct frontal attack are: that it is the simplest and can be the most quickly launched. Its disadvantages are: that it will doubtless be much more costly and in the end will take as long as an enveloping attack.

To envelop the enemy's left. This will be most effective against this hostile detachment if the Eastern army is successful *and is followed by General A's command* as it will cut the enemy from his line of retreat.

Its disadvantages are: that it will take longer; that the attack will be made over less favorable ground, and that in case the enemy is early victorious in the main fight General A is liable to be cut off and destroyed. That such an attack would put General A in a better position for his later movement against the main hostile army is after all open to question; if the enemy fights where he now is, General A, if victorious, will eventually find himself on or near the hostile position from whichever direction he attacks. If General A attacks from the hostile left and drives the hostile detachment to the southeast he must follow it up for, while it would, being a defeated force, be of little use in the main fight, it would nevertheless be a danger to the trains in rear of the Eastern army. Yet if General A follows this detachment away from the main fight he neglects his mission. The hostile detachment, being in friendly territory, would be in a better situation if driven to the southeast than General A would be if driven to the northwest or west.

If the hostile detachment is decisively defeated and

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driven to the northwest a small detachment will suffice to keep it away and General A then can march to engage in the main fight.

If the hostile detachment retreats toward the main fight it should be vigorously crowded, in which case its being driven in on the enemy's left of the main fight will be rather an advantage than otherwise to the Eastern army.

By attacking the left General A causes a greater dispersion in the Eastern army.

An envelopment of the enemy's right has practically been considered above in connection with the envelopment of the enemy's left, with its advantages and disadvantages. If the hostile detachment is thoroughly defeated, no matter from which direction the attack is made, it will be of little or no further use in the main battle today.

How shall General A use his cavalry? The ground to the west is less well adapted to cavalry work than that to the southeast or east.

If successful General A hopes to force the enemy to the northeast off the Hanover Road and delay as much as possible his rejoining the main body. General A also wants to open communication with his own main army. These considerations lead him to place the bulk of his cavalry on his left.

General A therefore decides: to attack the hostile detachment in his front at once, enveloping its right flank; to put the artillery in position nearly west of Brush Run S. H.; the bulk of the cavalry on his left flank; to have the 1st Infantry attack in front along the road to Boneauville, the 2d Infantry on the left of the artillery; to keep the 3d Infantry in reserve in rear of the right of the 2d Infantry; to have the 1st Infantry advance as soon as the other troops take up the march but not close to short range until the enveloping attack is launched—this measure will prevent too great an extension of front; to have the artillery, 2d Infantry and 3d Infantry move by the shortest practicable route behind cover;

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to have the ambulance company proceed to the crossroads near Brush Run S. H.

2d Requirement:

The commanders of infantry regiments, cavalry squadron, artillery battalion, and staff being asembled General A, at 9.10 A. M., issues the following verbal order which, if written, would be as follows:

1st Brigade, 1st Division,
Kilpatrick S. H.
1 Sept. 10, 9-10 A. M.

Field Orders
No. —

1. Our army is engaged with the enemy, right of our line near TWO TAVERNS. The brigade is ordered to strike the enemy's left flank.

A hostile detachment of about half our strength has taken position on ridge about 2½ miles south of here.

2. We will attack this hostile detachment enveloping its right and open our road to the enemy's left.

3 **a**. The 1st Infantry will advance along the road leading south and attack the enemy in front. This advance will begin at once and later will support the enveloping attack.

b. The 2d Infantry and 3d Infantry, in the order named, with the artillery on the left, will move under cover of this ridge along BRUSH RUN to opposite the BRUSH RUN S. H.

The artillery will then go into position to the west of that point and open fire on the enemy.

The 2d Infantry will deploy with right about 500 yards to the left of the artillery and move to the attack.

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The colonel, 2d Infantry, will provide the necessary security for the march.

c. The 3d Infantry will constitute the reserve and will take station in rear of the right of the 2d Infantry.

d. The 1st Squadron, 4th Cavalry, will cover our left, sending strong patrols to the right, and gain contact with the right of our main army.

4. The field train will remain where it now is.

The ambulance Company will follow the 3d Infantry as far as CEDAR RIDGE.

5. I will be at the head of the left column until it deploys, then near the reserve.

A,
Brigadier General.

Verbally to assembled officers. Copy by an aide to chief of staff.

In a case such as this a combined order, like the above, would generally not be issued. The 1st Infantry would be ordered to advance, then the column would be formed as ordered and marched to near Brushtown S. H., and then, if conditions remained unchanged, an attack order for the left column would be issued.

The reason for requiring the written order is understood by the class.

The protection to be furnished by the 2d Infantry would be chiefly observation on the right flank, since the cavalry immediately preceding the column renders little more necessary in that direction. The advance of the 1st Infantry is, however, essential.

It is assumed that General A's command is closed up at Kilpatrick S. H.*

*The continuation of this problem in the form of a study in Troop Leading, will be found in Part I, Problem 11.—*Ed.*

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PROBLEM 11 *

On a March to the Frontier

GETTYSBURG GENERAL MAP, HUNTERSTOWN, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

War has been declared between two hostile states, East and West, neither well prepared.

The Western army is being formed near Carlisle, the Eastern army near Baltimore. The frontier line is a short distance east of the eastern edge of the (three-inch) map. Both sides have a few troops ready to move.

The Western commander sends forward General A to to cover Gettysburg and prevent an invasion until he can move forward with the main army. General A's command consists of the 1st, 2d and 3d Regiments of Infantry, 1st Battalion, 4th F. A., 3d Squadron, 5th Cavalry, Company A, Signal Corps, 1st Ambulance Company, 1 wagon company artillery, and 1 wagon company small arms ammunition.

On the evening of June 1st this command is camped at Center Mills with outposts (1st Bn. 3d Inf.) extending from Mt. Olivet S. H. to J. Fohl. At 8 P. M., General A receives the following message:

Carlisle, Pa.,
1 June 10, 8 P. M.

Brigadier General A,
Center Mills.

Reliable information just received that a hostile force, strength unknown, reached REISTERTOWN today about 10 A. M.

*Problems 11 to 16 form a series given to the Army School of the Line, 1910-11, Course in Tactics—Part III, Map Problems Nos. 2 to 7. It was dubbed by the class "The Iron Brigade Series."

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General B with part of his brigade (2d) will reach GETTYSBURG tomorrow.

The General Commanding directs that you advance to BONEAUVILLE via GETTYSBURG.

X,
Chief of Staff.

Required:

1. General A's estimate of the situation.
2. General A's orders for June 2.

Solution, 1st Requirement:

General A's mission is simple—to march to Boneauville. The strength of his command is given in the problem.

Tomorrow part of General B's brigade will reach Gettysburg, what part is not mentioned nor the hour of its arrival so that General A can count on no support in case of need until late tomorrow and then the amount is uncertain. He is still more in doubt as to the enemy's strength for he has no information on that point except the general information as to the unpreparedness of the enemy which would seem to assure him that no very large force is near. From Reistertown to Boneauville is about 30 miles. The enemy reached Reisterstown today at 10 A. M., but it is unknown whether he is camped there tonight or has continued his march. General A estimates that if the enemy camped at Reistertown on June 1st he will not march more than 20 miles tomorrow, and probably much less, and will not be within 10 miles of General A at any time tomorrow. However, 10 A. M. is an early hour at which to have completed a day's march, even in June. It is more likely that the enemy is starting at about 6 A. M., and making from 13 to 18 miles a day; he is probably pushing forward his regular troops. In this case he would have camped June 1st from 5 to 10 miles nearer Boneauville than Reistertown and, even if he does not make a long march tomorrow, he may be expected to make camp near

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Littlestown if, as is assumed, Gettysburg is his objective. If the enemy does not intend to advance in that direction General A will not meet him.

Both forces are now in friendly territory. If the enemy continues his advance and crosses the frontier General A will find it easier to gain information of him.

General A's route and destination for tomorrow are fixed in his order. He has a good road through a rolling country and a march of about 14 miles to make. The most pronounced features are the town of Gettysburg and Wolf Hill ridge. Why he is ordered to take this particular route, necessitating his marching through the town and crossing the ridge, is not stated. One can surmise, however, that among the reasons for it are doubtless the moral effect, that, except for the ridge, he has a better road, and that he will thus more promptly interpose his force between the enemy and the town. Boneauville is a road center and has many advantages as a point for General A to reach and from which to cover Gettysburg from the approaching enemy. General A's route and destination being fixed he has only to consider the conduct of his march.

He first considers how to use his cavalry. He is far from the enemy and is in friendly territory. There is no urgent need of the cavalry with the advance guard. As he has estimated it, the enemy may reach Littlestown tomorrow, or even pass that place. To have this point definitely settled is greatly to be desired. General A is relatively strong in cavalry. He therefore thinks it best to make the cavalry independent and push it ahead to find the enemy.

For the reasons above given a strong advance guard is not necessary. One battalion of infantry and a few mounted scouts will answer.

Since he is so far from the enemy and his own orders are so definite, there is practically no danger of his having to change his march order if it is given out tonight.

He therefore decides: to march to Boneauville tomorrow starting at 6 A. M.; to send his cavalry ahead to find the

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enemy; to have the advance guard consist of one battalion of the 1st Infantry and 12 mounted scouts; to issue but one order and to issue that tonight.

2d Requirement:

The following order was issued at 9 P. M.:

Detachment, 1st Division,
Center Mills,
1 June 10, 9 P. M.

Field Orders
No. 2

Troops

Independent Cavalry:
Major C
3d Sq. 5th Cav.

Advance Guard:
Major K
1st Bn. 1st Inf.
12 Mtd. Scouts.

Main Body—in order of march:
1st Inf. (less 1st Bn.)
1st Bn. 4th F. A.
2d Inf.
3d Inf.
Sig. Co. A
1st Amb. Co.

1. A hostile force, strength unknown, reached REISTERTOWN about 10 A. M., today.

A part of our 2d Brigade will reach GETTYSBURG tomorrow.

2. This command will march tomorrow via GETTYSBURG to BONEAUVILLE.

3 **a**. The independent cavalry will start at 6 A. M. and march to LITTLESTOWN and gain touch with the enemy.

b. The advance guard will clear the cross-roads 400 yards south of CENTRE MILLS by 6-15 A. M.

c. The main body will follow the advance guard at 800 yards.

4. The field train and ammunition wagon companies will follow the main body at 1 mile.

5. I will be with the reserve of the advance guard after 8 A. M.

A,
Brigadier General.

Copies to regimental commanders, Major C, 5th Cavalry, Major K, 1st Infantry, Major L, 4th Field Artillery; verbally to staff.

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PROBLEM 12

Establishing Bivouac and Outposts

General Situation:

Problem 11 and its solution.

Special Situation:

When General A, at the head of the main body, reached Gettysburg he received a message from Major C, commander of the independent cavalry, sent by telephone from Boneauville, stating that he had encountered hostile cavalry patrols and driven them back toward Littlestown and that he was moving in that direction with his main body.

Just before General A's advance guard reached Boneauville he received a second message from Major C that he had met near Whitehall a hostile cavalry force of about his own strength and defeated it and driven it back toward Littlestown, and that one of his (Major C's) patrols reported a hostile column with head of advance guard, at 12 noon, at Center S. H., two and one-half miles northeast of Littlestown, moving toward that place.

At 1 P. M. General A, at the head of the reserve of the advance guard, reaches Boneauville and decides to go into bivouac for the night, the 1st Infantry, near Sweet Home S. H., to furnish the outpost.

Required:

1. General A's order.
2. Order of Colonel B, 1st Infantry.
3. Table showing location and strength of each picket and sentinels and patrols from each picket as well as those furnished directly from supports.

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Solution, 1st Requirement:

Detachment, 1st Division,
Boneauville,
2 June 10, 1 P. M.

Field Orders
No. 3

1. Our cavalry met the hostile cavalry near WHITEHALL about an hour ago and drove it back toward LITTLESTOWN. A patrol reports that at noon a hostile column was advancing west with head of advance guard at CENTRE S. H.

2. This command will go into camp for the night.

3 **a.** The 1st Infantry will camp northwest of SWEET HOME S. H. and will establish outpost from hill 627 on the north through ST. LUKE'S CHURCH to the COSHUN place. In case of attack this line will be held.

b. 2d Infantry will camp in field southwest of this town.

3d Infantry, in field north of this town.

1st Battalion, 4th F. A., in field northwest of this town.

1st Squadron, 5th Cavalry, west of the artillery.

Signal Company A, west of 2d Infantry.

1st Ambulance Company, near signal company.

Ammunition companies, near LAWRENCE farm house.

4. The field trains will join the organizations to which they belong.

5. I will camp at the western exit of the town.

A,
Brigadier General.

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Verbally to advance guard commander, colonels of infantry, artillery commander, and staff; by an aide to Major C, 5th Cavalry, Captain Q in charge of the trains and Captain S, Signal Corps.

Additional orders to Major C:

Detachment, 1st Division,
Boneauville,
2 June 10, 1-10 P. M.

To Major C, 5th Cavalry,
Near Whitehall:

This command goes into camp here for the night with outposts from hill 627 on the north through St. Luke's Church to the Coshun place.

You will remain in observation of enemy untill 6 P. M., and then proceed to your assigned camp.

A,
Brigadier General.

To Major C, by Lieutenant D; copy to Colonel B, 1st Infantry, by Lieutenant C.

2d Requirement:

Colonel B, after carefully studying his map and looking over the country issues the following orders:

1st Infantry,
Near Boneauville,
2 June 10, 1-30 P. M.

Field Orders
No. 1

Troops

a. Support No. 1
Capt. L
Co. G
4 Mtd. Scouts

1. Our cavalry met the hostile cavalry near WHITEHALL about noon and drove it back toward LITTLESTOWN. A patrol reports that at noon a hostile column was advancing west with head of advance guard at CENTRE S. H.

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Our brigade will go into camp about BONEAUVILLE.

2. This regiment will go into camp near SWEET HOME S. H. and establish outpost from hill 627 on the north through ST. LUKE'S CHURCH to the roadfork 587 south of the COSHUN place.

In case of attack the line of supports will be held.

Support No. 2
Maj. K
2d Bn. (less Cos. G & H.)
4 Mtd. Scouts

Support No. 3
Capt. M
Co. H
6 Mtd. Scouts

Support No. 4
Capt. N
Co. I (less 1st Sec.)
2 Mtd. Orderlies

Support No. 5
2d Lt. P
1st Sec. Co. I

b. Reserve
1st Inf. (less 5 cos. and 14 scouts)

3 **a**. Support No. 1 will take position near roadfork 587 about one mile southwest of BONEAUVILLE and will cover the sector from stream crossing on the west to first stream on its east both inclusive. Frequent patrols will be made to the BALTIMORE PIKE.

Support No. 2 will take position near the roadfork 617 about one mile and a quarter south of this camp and will cover the sector from the stream on its west to five hundred yards east of the stream on its east, and will patrol the road to the south as far as GERMANTOWN.

Support No. 3 will take position near ST. LUKE'S CHURCH and will cover the sector from stream about five hundred yards to its south, to the farm house one thousand yards northeast, both inclusive, patrolling road past WHITEHALL S. H.

Support No. 4 will take position on HANOVER ROAD at junction with BIHL farm road and will cover from left of Support No. 3 to roadfork 597 north of SQUARE CORNER, inclusive.

Support No. 5 will take position on north slope of hill 627, connect with Support No. 3 and cover the roadforks 601 and 598.

b. The reserve will camp near SWEET HOME S. H.

4. The wagons of the field trains will join the organizations to which they belong.

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Those belonging to the companies in the supports will join those of regimental headquarters by 8 P. M.

5. I will be at SWEET HOME S. H.

B,
Colonel.

Verbally to assembled field and staff officers and company commanders.

N o t e : This order would hardly be written in the field; if it were the form would probably be changed by omitting the designations in the margin and embodying that information in the body of the order.

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3d Requirement:

Support No. 1.	Picket No. 1—1 section at bend in road about ½ mile northwest of support.	Double sentinel at next bend of road west of picket. Double sentinel a little east of the south of picket. Single sentinel at picket. Patrol from picket west to stream and to connect with picket No. 2 and support. 3 reliefs × 5 sentinels=15. 3 reliefs × patrols of 2 men each=6. 3 Non-com. officers=3.
	Picket No. 2—1 section at roadfork 529, 1200 yards southwest of support.	Double sentinel west on road. Double sentinel south on road. Single sentinel at picket. Patrol—2 men, from picket to sentinels and to connect with pickets to right and left. 3 reliefs and 3 non-com. officers = 24.
	Sentry squad.	At stream opposite roadfork 531. Sentinel at road.
	From Support.	Dismounted patrols of 2 men each visit pickets, two out all the time. Mounted patrol—2 men to roadfork near Two Taverns. Sentinel at support.

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Support No. 2.

- Picket No. 1—1 section at roadfork 584.
  - Single sentinel on road about 100 yards east of picket.
  - Single sentinel on road about 100 yards west of picket.
  - Single sentinel on road about 100 yards south of picket.
  - Single sentinel at picket.
  - One patrol of two men on road between 531—621.
- Picket No. 2—1 section at roadfork 621.
  - Sentinels same as No. 1.
  - Patrol—2 men 584—587.
- Picket No. 3—1 platoon at roadfork 587.
  - Single sentinel near stream crossing about 100 yards west.
  - Single sentinel about 150 yards east on road.
  - Single sentinel at picket.
  - Sentry Squad No. 1 at roadfork 608.
  - Sentry Squad No. 2 at crossroads 595.
  - Sentry Squad No. 3 at roadfork 615.
  - Patrol of 3 men to move from picket southeast of 608—595, thence north to 615, thence northeast of 615 back to picket.
- From Support.
  - 2 sentinels at support.
  - 2 patrols of 2 men each, dismounted.
  - Mounted patrol (standing)—2 men near Germantown.

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- Support No. 3.
  - Picket No. 1—5 squads at roadfork 637.
    - Sentry Squad No. 1 at road near Shebley.
    - Sentry Squad No. 2 at road-fork about 550 yards northeast.
    - Cossack post on ridge 500 yards south of 637 near bend in fence.
    - One patrol—2 men to move to cossack post, thence along fence to sentry squad, thence by farm road north and west to next squad, thence back.
    - Single sentinel at picket.
  - Picket No. 2—2 squads at farm-house.
    - Double sentinel at picket.
    - Patrol from Square Corner to Sentry Squad No. 2 of Picket No. 1.
  - From Support.
    - Double sentinel at support.
    - Mounted patrol (standing) near 593.
    - Dismounted patrol—2 men to connect with Support No. 2.
    - Dismounted patrol—2 men to visit pickets.

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Support No. 4.	Picket No. 1—4 squads at Square Corner.	Double sentinel on road about 150 yards southwest.
		Double sentinel on road about 150 yards northeast.
		Double sentinel on Hanover Road about 150 yards east.
		Single sentinel at picket.
		Patrol—2 men to patrol from farmhouse to crossroads 597.
	Picket No. 2—1 section at roadfork 597.	Double sentinel on road to Square Corner 100 yards away.
		Double sentinel on road southeast 100 yards away.
		Sentry squad at 573.
	From Support.	Single sentinel at support.
		2 dismounted patrols—2 men each, 1 to visit pickets and the other to connect with the supports on right and left.

Support No. 5.	Cossack Post No. 1 at end of farm road leading nearly east.
	Cossack Post No. 2 at crossroads 601.
	Cossack Post No. 3 at crossroads 598.
	Single sentinel at support.
	Patrol—2 men to move by farm road to Support No. 4 and returning visit Cossack Posts Nos. 2 and 3.

Note: Where double sentinels are prescribed, only one is posted during daylight. Patrolling begins at dusk except that each patrol should go over its route once before dusk.

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PROBLEM 13

On a March to Attack

General Situation:

Problems 11 and 12 with solutions.

Special Situation:

At 4 P. M. General A receives the following report from Major C:

1st Squadron, 5th Cavalry,
One Mile South of Whitehall,
2 June 10, 3-30 P. M.

Brigadier General A:

Enemy has gone into camp east of LEFEVRE with outpost line on range of hills west of that place.

Lieutenant Z in command of an officer's patrol obtained a fairly good view of his column but was driven off before its strength could be exactly determined. He estimates the enemy's strength at two regiments of infantry and a battalion of artillery.

The enemy's cavalry does not exceed a squadron.

C,
Major, 5th Cav.

All information received is telegraphed to army headquarters at Carlisle.

At 9 P. M. the following telegram is received:

1st Field Army,
Carlisle,
2 June 10, 8-30 P. M.

Brigadier General A,
Boneauville.

Reliable information received here confirms your

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report of estimated strength of enemy in your immediate front.

It is believed from such information as we have that another hostile brigade of infantry is from one to two days' march behind the force now in your front.

General B with 38th Infantry and one battery will intrench a position on the Wolf Hill ridge across the Hanover Road early tomorrow. The 38th, as you know, is a new regiment; it is believed it will do well in defensive works but it is not considered safe to risk it in the open at present.

The 2d Brigade and 3d Field Artillery (regulars) are en route from the west by rail and will proceed as soon as possible to Gettysburg. Should reach that place before morning of June 4th.

It is desirable that the enemy be driven across the frontier. Gettysburg must be saved, if possible, regardless of cost.

X,
Chief of Staff.

Required:

1. General A's estimate of the situation.

2. General A's orders issued before 6 A. M., June 3, assuming that nothing new is learned of enemy prior to that time.

Solution, 1st Requirement:

From information received General A estimates the strength of the enemy in his immediate front to be equal to his own in cavalry and artillery and to be one regiment less in infantry. The enemy has reinforcements of a brigade at least moving to his support but from the information at hand his reinforcements can not reach this locality tomorrow.

General A cannot expect reinforcements tomorrow. The 28th Infantry and a battery will intrench a position on

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Hanover Road and will afford support and aid in case he is forced back, but this force will not help him in the open field.

After tomorrow there will be a stronger force available; the 2d Brigade and 3d Regiment Field Artillery will be up.

The enemy has invaded the Blue territory. This, should General A decide to fight, will, in a way, be an advantage; for he will be in friendly territory, the enemy in hostile; information will be easier to obtain; his men will be fighting for their homes. The moral effect of allowing the enemy to remain on our side of the frontier is likely to be bad and, in the message from the chief of staff, General A is told that it is desirable that this enemy be driven across the frontier; but that Gettysburg *must* be saved.

General A appreciates that the moral effect of a victory or defeat in the first encounter of a war is very great and that he should avoid a defeat. If he can not only defeat the enemy, but at the same time throw him back across the frontier, it will be a great advantage.

What are his chances of victory if he fights?

He has a superiority in infantry of 3 to 2, an equality in artillery, and, while probably equal in cavalry, he has the advantage in that his squadron has already in one encounter defeated the hostile squadron and thereby acquired a prestige of value.

The enemy has not a very strong position but he has reinforcements approaching and it is desirable to defeat thoroughly the more advanced detachment before the other can come up.

The enemy's reinforcements may arrive late today while some break in the railroad may prevent ours from reaching Gettysburg for another day. If General A waits for the 2d Brigade to come up the enemy will also receive a brigade and the relative superiority of the Blue force will then be less than it is now.

General A sees that his mission is to drive the enemy across the frontier if practicable, but to be sure of saving

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Gettysburg from capture. He believes that his best course is to move promptly and vigorously against the detachment at Lefevre, and this becomes his immediate mission.

What will the enemy do? He may stay where he is and await reinforcements; he may move against General A; or he may move on Gettysburg by the Baltimore Turnpike. His action will depend largely on the information he has as to General A's strength, and of course on his orders and the proximity of support. Unless his support is nearer than General A believes, the enemy would not have pushed across the frontier to sit down and wait. General A believes the enemy is misinformed as to Blue strength and has started for Gettysburg. The enemy knows that there are Blue troops nearby but, as his cavalry was defeated and driven in, it probably gained little or no information. The enemy would have expected in any case to encounter Blue cavalry on crossing the frontier.

If the enemy has learned of General A's strength and location and his support is as far away as reported he will probably intrench a position and wait. If, on the other hand, he believes General A's force to be principally composed of the cavalry he has seen, he will be more apt to move on Gettysburg by the Baltimore Turnpike. If he thinks there is a small force of infantry and artillery at Boneauville in addition to the cavalry he will naturally move first against that and then advance on Gettysburg by the Hanover Road. He would not want to leave a hostile force on his flank and rear.

General A decides to move against the detachment at Lefevre and must now determine the best way to do this to meet any of the probable moves of the enemy.

1. He can advance by the road to Two Taverns, thence by Baltimore Turnpike.

Advantages: As the force under General B will close the Hanover Road to the enemy, General A, by moving in

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this way, promptly places himself across the other main road leading from the enemy's position to Gettysburg.

Disadvantages: The road is longer and the enemy, if he stops where he is, will have more time to prepare his position. If the enemy moves out and learns of General A's route he will have a fine opportunity to strike the Blues in flank and at a decided disadvantage.

2. He can move by the direct road through Whitehall.

Advantages: If the enemy remains where he is, it is the shortest and most direct route; if the enemy advances by the Baltimore Turnpike an opportunity may be offered for striking him in flank; if he advances on Boneauville it will result in a meeting engagement under as favorable conditions as General A can expect.

Disadvantages: If General A is decisively defeated it may open the Baltimore Turnpike to the enemy's advance direct to Gettysburg.

3. In addition to the roads considered there is a complete net work of cross roads connecting these two main routes. The country is rolling, cut by small streams, but offering no very pronounced features or obstacles.

Information of the enemy's movements in the morning is of great importance. General A must depend on his cavalry to get this for him. Accordingly they must be out early and had better be sent independently. The trains will remain at Boneauville until further orders: if General A is defeated he wants them far enough back so they will not impede his march to the rear; if he is successful they can easily rejoin. From Boneauville they can readily advance toward Littlestown, by the cross roads to the Baltimore Turnpike or, in case of necessity, by the Hanover Road to Gettysburg.

General A decides to move early tomorrow morning by the road through Whitehall against the enemy at Lefevre;

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to make his cavalry independent and send it out early; to leave his trains at Boneauville for the present. Since there is a chance that conditions may change, as the enemy is so close, General A will issue two orders.

2d Requirement:

Detachment, 1st Division,
Boneauville,
2 June 10, 7 P. M.

Field Orders
No. 4

1. The hostile detachment in our front is believed to consist of two regiments of infantry, a battalion of field artillery and squadron or less of cavalry. It has gone into camp east of LEFEVRE with outpost on ridge west of that place.

General B with part of his brigade will intrench a position across HANOVER ROAD on WOLF HILL ridge early tomorrow morning.

2. The 1st Squadron, 5th Cavalry, will move out at 4-30 A. M. tomorrow and regain contact with the enemy.

3. The remainder of this command will be ready to march at 5-30.

4. All mounted officers will assemble at western exit of this town at 5-10 A. M., to receive orders.

A,
Brigadier General.

Dictated to officers designated to receive orders for their organizations.

At 5.10 A. M., the officers having assembled and nothing more having been learned of the enemy, the following order was issued verbally which, if written, would be as follows:

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Detachment, 1st Division,
Boneauville,
3 June 10, 5-10 A. M.

Field Orders
No. 5

Troops
Independent Cav.:
Major C
1st Sq. 5th Cav.

Advance Guard:
Col. D
2d Inf. (less 3d Bn.)

Main Body—in order of march:
3d Bn. 2d Inf.
1st Bn. 4th F. A.
(less reserve)
3d Inf.
1st Inf.
Artillery reserve
1st Amb. Co.
Sig. Co. A

1. Nothing more has been learned of the enemy or of our own troops.

2. This command will move by WHITEHALL toward LEFEVRE.

3 **a**. The independent cavalry as previously ordered.

b. The advance guard will clear the road-fork at southeastern exit of this town by 5-40 A. M. marching by the ST. LUKE'S CHURCH—WHITEHALL road.

c. The main body will follow at 800 yards. The outpost will stand relieved when the support of the advance guard reaches ST. LUKE'S CHURCH; it will then close in on the road and take its place in the column.

4. The field train and ammunition wagon companies will park, after 6-30 A. M., near western exit of this town, in readiness to move either east or west.

5. I will be near the head of the reserve of the advance guard.

A,
Brigadier General.

Verbally to assembled officers.

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PROBLEM 14

In an Encounter

General Situation:

Problems 11 to 13 with solutions.

Special Situation:

As the support of the advance guard reaches St. Luke's Church, a message is received from Major C stating that he has, a short time before, met the enemy's cavalry south of Whitehall, defeated it and driven it toward the east.

Shortly after, another message is received from Major C stating that the enemy is advancing by the Pleasant Hill S. H.—Boneauville road.

At 6 A M., as the support of the advance guard reaches Whitehall, firing is heard at the front and Major C reports from east of Whitehall that the enemy is going into position on 627 hill, one-half mile north of Pleasant Hill S. H. Personal observation by General A and further reports from the cavalry and advance guard confirm this report.

Required:

1. General A's orders.
2. His reasons for his action.

Solution, 1st Requirement:

Detachment, 1st Division,
St. Luke's Church,
3 June 10, 6-30 A. M.

Field Orders
No. 5.

1. The enemy in our front has advanced and is

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now taking up a position on hill 627 about 2½ miles from here.

Our cavalry has again defeated the hostile cavalry and driven it eastward.

2. This command will attack the enemy, enveloping his left. The role of the advance guard as such will now cease.

3 **a**. The battalion of artillery will proceed south on the road past the NEWMAN place to the farm road about 1½ miles from here, thence east across PLUM CREEK and take position north of said farm and open fire on the enemy. In moving to position, where necessary to gain cover from view, it will move off the road.

b. The 3d Infantry will follow the same route prescribed for the artillery and, after crossing PLUM CREEK, will move to attack the enemy, its left near the 613—565 road.

c. The 2d Infantry will attack along the road it is now on but will not advance beyond WHITEHALL S. H. until the artillery opens fire. It will later push the attack in support of the 3d Infantry.

d. The 1st Infantry will form the reserve and will follow in rear of the left flank of the 3d Infantry.

e. The cavalry will cover our left flank, sending patrols to observe on the right.

f. The signal company will establish a line connecting me with BONEAUVILLE and with the commanding officer, 2d Infantry.

4. The 1st Ambulance Company will follow the reserve to the crossing of PLUM CREEK and there await orders.

5. Messages will be sent to crossroads 613.

A,
Brigadier General.

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Verbally to assembled commanders of infantry regiments, artillery battalion, signal company and staff. Copy by Lieut. K to Major C.

2d Requirement:

General A decides to envelop the enemy's left instead of his right for the following reasons:

The terrain affords more cover to the infantry advance on this flank than on the other. The attack can be equally well supported by artillery on this flank. Our troops have, probably, already closed the Hanover Road to any sudden rush by a small force on Gettysburg. By attacking the hostile left General A interposes his command between the enemy and Gettysburg by way of the Baltimore Turnpike.

The assignment of regiments is in accordance with their present position in column. The position of the artillery gives concealment from view and, except for a short distance over good ground, it can be reached by road without exposure to view by the enemy. The range is about 3500 yards which is satisfactory. It is located between the two attacks. The cavalry is placed on his left for the reason that General A believes that the hostile cavalry is in that direction. That is where it was last seen. The terrain is also more favorable for cavalry on that flank.

It is too early to give orders for the establishment of a dressing station. The enemy may move before the attack can be developed. The company is therefore moved to a convenient place between the two attacks and will later receive such orders as may be found necessary.

The ammunition companies are not mentioned in the order. In Field Orders No. 4 the command was told where they were. There is no reason for moving them closer at present. It is only 2½ miles from where the 2d and 3d regiments will probably issue their extra ammunition to the position of the wagon companies and the battalion wagons

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can go that far. St. Luke's Church is the nearest they could be brought anyway and it is considered best to leave them where they are for the present. The field trains are a little closer than is desirable but, with telegraphic communication and the trains ready to move at a moment's notice, there is no serious objection.

The position selected by General A for his own station is central, commands a fair view of the field of battle and has nearby cover for horses and orderlies.

It is doubtful if there is much need of the telegraph lines ordered laid but as the company is here and available it is better to have the lines laid.

A report of General A's action is sent to field army headquarters and to General B.

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PROBLEM 15

On the Approach of an Unexpected Enemy

General Situation:

Problems 11 to 14 with solutions.

Special Situation:

At 10 A. M. General A's attack is progressing favorably. His artillery seems to be superior to the enemy's. The 2d Infantry has advanced beyond the farm road and is about on line with the Schild place. The 3d Infantry is astride the 564—598 road on the ridge about 700 yards from the enemy. The 1st Infantry is in the little valley east of road-fork 565. The artillery is in its first position. The trains are still in Boneauville. Orders have been sent to the ambulance company to establish a dressing station west of 564 and another near creek south of Whitehall S. H.; the number of wounded is so far small. The battalion supports of the 1st and 2d Regiments have been absorbed in the firing line; their regimental reserves are still intact.

At this time General A receives the following message from Major C, 5th Cavalry:

1st Squadron, 5th Cavalry,
Centennial,
3 June 10, 9-30 A. M.

To General A:

A hostile column consisting of one brigade of infantry and one battalion of field artillery advancing west past CONEWAGO CHAPEL, point of advance guard now at bridge over LITTLE CONEWAGO CREEK.

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I will remain in observation and delay enemy's march.

C,
Major, 5th Cav.

Required:

1. General A's plan of action and reasons.
2. General A's orders.

Solution, 1st Requirement:

General A decides to withdraw his command by the Baltimore Turnpike; to begin the withdrawal from his left, first the 2d Infantry, then the 3d Infantry; to have the 1st Infantry and the artillery form the rear guard and cover the movement. The cavalry, as it falls back, will be ordered to report to and join the rear guard. The first order will be for the trains to withdraw to Gettysburg and for Company A, Signal Corps, to follow the trains.

General A at present is not so far committed to the action as to make an orderly withdrawal impracticable. With a force in his front nearly equal to his own and an equal force coming in on his flank the chances are that if he waits he will be routed and driven through Gettysburg or to the south of his line of communications. By falling back now in good order he may be able to take up a strong position and hold off even the now superior enemy until reinforcements can arrive.

The Hanover Road is closed by General B's force and they can hold it for a time at least. By taking the Baltimore Turnpike General A can delay the enemy if he advances by that road. From the direction of the approach of the hostile reinforcements a withdrawal by the Hanover Road would be certainly hazardous, if not impossible. Moreover, by retreating by the Baltimore Turnpike, a junction can be formed with General B behind the Wolf Hill ridge.

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The movement should begin with the 2d Infantry because that regiment is the most exposed to the blow of the enemy approaching from the north and is also the farthest from the line of retreat. The 1st Infantry is still intact and in rear and hence is the best organization to form the rear guard. "The rear guard should be strong in artillery." As we have but one battalion of field artillery it is all assigned to the rear guard.

"Cavalry is a most valuable arm to a rear guard." At present our cavalry is doing a valuable work in delaying the advance of the hostile reinforcements but it cannot keep this up long and when it falls back it should form part of the rear guard. To make it independent under such circumstances would be positively wrong; it must work with the other troops to hold back pursuit, if one is made, and the troops so employed should be under one commander.

The trains are now at Boneauville. To bring them south to the Baltimore Turnpike would be a mistake. It would be apt to cause delay and congestion on the turnpike and would expose the trains to more danger. By moving back on the Hanover Road they can move promptly, directly from the enemy on an unincumbered road, and will be soon under the protection of General B's force. At Gettysburg they are easily accessible to General A if he halts in a defensive position before reaching the town, and, if he continues his retreat, they are in front of him as they should be.

The signal company can take up the wire it has laid and follow the trains. General A can have no use for this company until he halts and it can rejoin him west of the ridge.

Every effort should be made to carry back the wounded. Those too seriously injured to be moved will have to be left for the enemy to care for.

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2d Requirement, Orders:

3 Miles South of Boneauville,
3 June 10, 10 A. M.

To Captain Q,
In charge of trains:

Heavy reinforcements for enemy approaching from the north.

Shall fall back toward Gettysburg.

Move the trains without delay by Hanover Road to Gettysburg.

A,
Brigadier General.

By telegraph to Capt. Q, copy by messenger.

Verbally to Chief Surgeon:

The enemy will soon be heavily reinforced. I shall withdraw toward Gettysburg by Baltimore Turnpike.

Make every effort to remove the wounded toward Gettysburg.

3 June 10, 10-05 A. M.

To Col. G,
2d Inf.:

A hostile force of one brigade of infantry and a battalion of artillery approaching from the north now passing Conewago Chapel.

I shall withdraw toward Gettysburg, movement beginning from the left. You will withdraw your regiment to Germantown, thence by Baltimore Turnpike to beyond White Run.

Movement to begin at once.

A,
Brigadier General.

By Lieut. D.

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3 June 10, 10-10 A. M.

To Col. H,
3d Inf.:

Heavy reinforcements for enemy approaching from north now near Conewago Chapel. This command will withdraw toward Gettysburg by the Baltimore Turnpike, movement to commence on the left.

The 2d Infantry is about to withdraw; increase your fire as theirs ceases; do not advance beyond where you are and do not withdraw until further orders.

The 1st Infantry, artillery, and cavalry, will form the rear guard and cover your withdrawal.

A,
Brigadier General.

By Lieut. E.

Verbally to Captain S, Signal Corps:

Recover your lines now laid and with your company follow the trains by Hanover Road to Gettysburg.

Verbally to Colonel B, 1st Infantry:

A hostile force of one brigade of infantry and one battalion of field artillery is approaching from the north, now passing Conewago Chapel.

This command will withdraw toward Gettysburg by Baltimore Turnpike, movement to commence from our left.

Move your regiment to near Germantown and take a position to cover withdrawal of the other infantry regiments, then follow as rear guard.

The cavalry and artillery will be ordered to report to you.

Keep the road clear for the other troops.

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Verbally to Major A, 4th Field Artillery:

> A hostile force of one brigade of infantry and one battalion of field artillery is approaching from the north, now passing Conewago Chapel.
>
> This command will withdraw toward Gettysburg by the Baltimore Turnpike, movement to commence from our left.
>
> The 2d Infantry is about to commence the movement.
>
> Colonel B with the 1st Infantry, your battalion and the cavalry will form the rear guard.
>
> Move your batteries singly to the west of Plum Creek near end of farm road about one mile from here, take position there to check enemy and open fire; report to Colonel B, 1st Infantry, when movement is completed, for further orders. Colonel B is now moving with his regiment to Germantown.

By an officer later to Major C, 5th Cavalry:

> Retreat ordered by Baltimore Turnpike toward Gettysburg. Colonel B, 1st Infantry, will command the rear guard consisting of his regiment, the artillery battalion and your squadron.
>
> When compelled by the enemy to fall back report to Colonel B for orders. His regiment is now moving to Germantown.

After the 2d Infantry has reached the Baltimore Turnpike and is far enough to the west so as not to block the road for the 3d Infantry, the following message is sent to the Colonel, 3d Infantry, by an aide:

> Commence your withdrawal and continue your retreat to beyond Rock Creek where further orders will be sent you.

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General A would, if practicable, have the rear guard hold on to the position near Germantown until his wounded and the 3d Infantry were well on the way.

His orders to the 3d are such that, if not too much pushed, they will pass the 2d Infantry.

His reasons for this are that the 2d Infantry was withdrawn so early that it has not been seriously engaged; one battalion has probably not even been deployed. This regiment should have been readily reformed and, at White Run, should be in condition to again go into position and help hold back the enemy. The 3d, on the other hand, has been in action alone after the 2d was withdrawn, has probably been harder pressed, has little or no reserve left, and it will take longer and be much harder to reform it. It is believed better to get the 3d regiment, therefore, farther to the rear where this can be done. Of course if the rear guard is pushed too hard the other troops will move so as to save time and the 2d may have to lead.

The artillery, as the batteries reach their new position, will open fire on the enemy. Their later movements will be controlled by Colonel B.

General A would remain where he could best supervise the situation and see that the 3d and 2d Infantry Regiments were not halted too soon and that they did not retreat too far. Close attention is given through staff officers to having organizations reformed and to prevent all straggling.

A retreat of this kind, undertaken before defeat or before having become even closely engaged, is a very different matter from the retreat from the battlefield of a decisively defeated force, and very much easier. It must be promptly done, however, to prevent its becoming the latter.

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PROBLEM 16

While Awaiting Reinforcements

General Situation:

Problems 11 to 15 with solutions.

Special Situation:

As the reserve of the rear guard is crossing White Run, the 2d Infantry is crossing Rock Creek, the 3d Infantry is halted just north of the little stream beyond McAllister's Hill and is nearly reformed. The disorganization and demoralization were slight and losses had been light.

At this moment, 1 P. M., the cavalry reports that the enemy has not advanced beyond Germantown and, as far as could be seen, the greater part of the reinforcements from the north have reached Plum Creek on the Baltimore Turnpike and halted.

At the same time a telegram is received from the division commander as follows:

1st Division,
Centre Mills,
2 June 10, 12.30 P. M.

General A.

Troops are arriving here now. General B has been reinforced and can hold Wolf Hill inclusive north.

With your command take up a defensive position to cover Gettysburg from Wolf Hill to the south and west.

The 2d Brigade will reinforce you before 6 A. M. tomorrow.

K,
Major General.

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Required:

1. General A's estimate of the situation.
2. General A's plan of action in detail.

Solution, 1st Requirement:

General A's mission, under his new orders, is but slightly modified. He must do his best to hold back the enemy and cover Gettysburg. His field has been limited somewhat. General B will cover from Wolf Hill north; General A must cover all the other avenues by which the enemy may approach.

The enemy has 5 regiments of infantry, 1 regiment of field artillery and, so far as known, only 1 squadron of cavalry. General A has but 3 regiments of infantry, ½ a regiment of field artillery and 1 squadron of cavalry.

The enemy has probably gained somewhat in morale by our having had to retreat and undoubtedly has confidence in his superiority in numbers. General A's command has no doubt suffered somewhat in morale, except his cavalry, which has twice been successful against the enemy's. General A's command, however, was not defeated, but withdrew to avoid being placed in a very unfavorable position. He was not vigorously pursued and his command was therefore not much demoralized. His men are fighting for their homes, they expect ample reinforcements by tomorrow morning and these conditions may largely offset the discouragement arising from the retreat.

Nothing is said in his orders about the troops on his left supporting General A in case the attack falls entirely on his side; but doubtless some help will be afforded him in this event.

The enemy has failed to pursue promptly and push his advantage. The reason for this neglect of the proper course on his part is a mystery. His cavalry was inferior and he is in hostile territory; his information is not likely to

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be very satisactory. Rumors as to General B may have reached him and General B's forces may have been greatly exaggerated. There may have been many reasons and it is profitless to guess. Fortunately for General A, the enemy, whatever the reason, did not pursue.

What will the enemy do now? He may stay where is, withdraw across the frontier, attack General B, or move against General A.

General A's problem is a serious one only until his reinforcements arrive, and only in case he is attacked today. If General A is prepared for that contingency he is prepared for all. He must therefore select a defensive position to keep the enemy from reaching Gettysburg anywhere south of Wolf Hill.

If the enemy attacks Gettysburg on the front to be held by General A he may advance along the Baltimore Turnpike; from the south along the Taneytown Road and the road between it and the Baltimore Turnpike; or he may turn the Round Tops and advance by the Emmitsburg Road.

General A with his force cannot occupy a line so extended as to cover all these roads directly. Between the Baltimore Turnpike and the Round Tops is the more likely line of attack. For the enemy to attack north of the Baltimore Turnpike is not probable. It would place him between the two commands; he would have to force his way over the difficult ridge and then would have unfavorable ground beyond. Nevertheless this portion of the terrain might be used by a small turning force.

It is already after 1 P. M. If the enemy is to attack today he has no time for wide turning movements, such as that by the Emmittsburg road, which has the further disadvantage for him of dangerously exposing his line of retreat.

The terrain is somewhat favorable to General A's task. The Wolf Hill ridge is steep in places and heavily wooded; the Round Tops are still more so. Neither favors an attack. Between these two obstacles there is more favorable terrain

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about one and one-half miles in width. This latter ground is broken and rolling and is crossed from McAllister's Hill to Little Round Top by a chain of small hills convex to the southeast. About half a mile north of this chain, is another ridge more at right angles to the hostile line of advance.

By taking this second ridge as his line of defense General A will have a shorter line but a more limited field of fire, especially on his left, while his right is farther removed from Little Round Top than is desirable.

By taking the line from G. Musser to Geo. Spangler and thence to south of J. Musser he obtains a better defensive line except that it is longer. It is too long for his one brigade but will be none too long at 6 A. M., tomorrow, when the 2d Brigade arrives. He believes that by a proper distribution of his troops he can hold this line, which also has the advantage of being farther from Gettysburg, while the other line will make a good second position to fall back on. A small flank guard is necessary on Round Top, another on hill 564 between the Baltimore Turnpike and Wolf Hill. If General A takes the more advanced position, the northwest angle of the roads, near Geo. Spangler's, will be a good position for his artillery.

Of course the position should be strengthened as much as possible, but to intrench the whole length of the line is neither practicable nor necessary.

2d Requirement:

General A therefore decides to halt his command behind the line G. Musser—Geo. Spangler—J. Musser; to establish an outpost of one battalion, 1st Infantry, from St. Mary's Church to Round Top; to have the cavalry maintain touch with the enemy until dark.

A detached post will be at once sent to hill 564 and another to Round Top, each to intrench its position strongly. The Emmitsburg Road is not held directly but his reserves

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will be so placed as readily to take a position to flank that road if necessary. If attacked during the afternoon he will deploy on the line ordered intrenched according to the direction of the attack. The 3d Infantry will be held as the reserve; the artillery will be posted, probably, northwest of Geo. Spangler.

If not attacked during the afternoon, at sundown he will withdraw the present outpost, and post the 1st Infantry to hold the line from Wolf Hill to the F. Swisher—Geo. Spangler road both inclusive. Two companies will occupy the works at hill 564 and observe the country from Wolf Hill to the Baltimore Turnpike, both inclusive; the remainder of this regiment will bivouac near its intrenched line with outpost in front.

The 2d Infantry will be posted to hold the line from the right of the 1st Infantry to the Emmitsburg Road; 2 companies will occupy the works on Round Top and observe from the Taneytown Road exclusive to the Emmitsburg Road inclusive; the remainder of the regiment will bivouac near its intrenched line with outpost in front.

The 3d Infantry will be held in reserve near hill 592 on the Taneytown Road. The artillery will bivouac at the orchard northwest of Geo. Spangler. Major C and his squadron will bivouac near the artillery, furnishing strong patrols on the Baltimore Turnpike, Taneytown Road and Emmitsburg Road and observing the others in the direction of the enemy.

The signal company will connect General A by a telegraph line with General B and with Gettysburg, using existing lines as far as possible. The field trains will join the troops returning to Gettysburg by 8 P. M. Ammunition to resupply the troops will be brought forward and distributed as soon as practicable. The wounded will be sent in to Gettysburg.

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PROBLEM 17*

Covering the March of a Convoy

GETTYSBURG GENERAL MAP
ARENDTSVILLE, HUNTERSTOWN, KNOXLYN AND GETTYSBURG THREE-INCH SHEETS

Situation:

The frontier between two hostile states, Blue, north, and Red, south, is an east and west line about twenty miles north of Gettysburg. A Blue army has invaded the enemy's territory and recently fought a severe but indecisive battle near Hagerstown. Both armies are still in that vicinity. Carlisle is a Blue depot fortified and garrisoned. Partisans have recently wrecked the railroad about Gettysburg.

After the battle the general in chief sent north, under command of Major General X, a convoy of wagons to bring up ammunition from Carlisle. Carried in these wagons and in ambulances were about eight hundred sick and slightly wounded. The troops under Major General X were:

> The 1st Brigade, N. Y. Infantry. The regiments of this brigade were much depleted; they had been very roughly handled in the last battle and their term of service had nearly expired; they were going back for muster out.
>
> Battery A, 1st Connecticut Field Artillery, going back in much the same condition and for the same reasons. The remainder of this regiment had been captured.

*Army School of the Line, 1911–12, Course in Tactics—Part II, Map Problem No. 1.

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The 2d Brigade, N. Y., in excellent condition, consisting of the 4th, 5th and 6th Regiments of Infantry, reinforced by the 1st Battalion, 2d Field Artillery, and the 1st Squadron, 4th Cavalry, under command of Brigadier General A. General A's command was to form part of the convoy escort to Carlisle and to constitute the escort for the return of the convoy with the ammunition.

The night of October 1/2 the command of General X camped about Barlow except Brigadier General A's command which was near J. Musser with outpost (furnished by 6th Infantry) from McAllister Hill west across the Emmitsburg Road. The orders for October 2d were to be ready to march at 6 A. M.

At 5 A. M., October 2, General X gave the following order to Brigadier General A:

I have just received information that a hostile force consisting of two brigades of infantry, one regiment of field artillery and one squadron of cavalry, is moving east on the Chambersburg Road and is now in camp six miles west of Gettysburg.

A spy reports that it is moving to cut us off from Carlisle.

I shall start the convoy at 6 A. M. by Two Taverns, Boneauville, New Oxford, and from there by the Carlisle—Baltimore road on Carlisle.

You will cover this march with your command.

The other troops will form the immediate guard for the trains. The combined trains are about three miles long. Your field train will join the convoy.

Required:

1. Brigadier General A's estimate of the situation.
2. His march order.

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Solution, 1st Requirement:

General A's mission is stated in his order—to cover the march of the convoy in its movement to New Oxford and on toward Carlisle. This means he must keep the enemy beyond artillery range of the trains. The manner of doing this is left entirely to General A's judgment.

The force he has to hold back is double his own in infantry and artillery and equal in cavalry, as stated in the problem. A fight to a decision would therefore probably mean the ruin of his command.

His command is in excellent condition; he can count on good work from it; he is in hostile territory which will be somewhat to his disadvantage and to the advantage of the enemy both as regards gaining information and in inspiring the hostile troops striving to expel the invader.

General A has one advantage in that he does not have to win a battle but merely to cause delay until this flank march of the convoy is beyond the reach of the enemy's guns.

The exact length of General X 's column can not be determined from the data given. The trains are three miles long. The battery, while depleted in strength, is probably as long on the road as a full battery—320 yards. A brigade of infantry with combat trains is 2800 yards long. This 1st Brigade is probably not more than half this, or 1400 yards. The total length of the troops is thus one mile, but part of these troops will precede the train as advance guard and, as the trains start at 6 A. M., General A can count on 3 miles of wagons plus ¾ miles of troops plus 1 mile of distances for the rear guard, or 4¾ miles as the length of column from the head of the train to the rear of the rear guard. General A considers it as 5 miles in estimating the situation.

The column is long and cumbersome. Although the wagons are not heavy General A considers that they cannot make over 2½ miles per hour. The tail of the column will therefore leave Barlow at 8 A. M. From Barlow to Two

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Taverns is 4 miles. The column will have passed that point at 9.36 A. M. From Two Taverns it is 3 miles to Boneauville which will be cleared by the column at 9.36 plus 1.12= 10.48 A. M. From Boneauville it is 6 miles to New Oxford which will be cleared by the column at 10.48 plus 2.24=1.12 P. M.

General A now studies his map to see in what ways the enemy might interfere with the march of the convoy. If the enemy were to start at 6 A. M. and march at 2½ miles per hour, on Barlow, a distance of 11⅓ miles from his camp, he could not reach the convoy with infantry even without being delayed.

The enemy's distance from Two Taverns is 12 miles or 4 hours and 48 minutes march. He could not reach there until 10.48 A. M., but by shortly after 10 o'clock he could reach a position from which he could fire into the rear of the convoy with artillery. If then the enemy should start a little earlier than we have assumed or march a little faster or if the convoy goes more slowly, it might be caught there.

From the enemy's camp by the Hanover Road to Boneauville is 11 miles; his advance then could reach this point at 10.24 A. M. or 24 minutes before it will be cleared by General X's column. Moreover from near Mt. Vernon S. H. the artillery could fire on the column for the first mile beyond Boneauville. If the enemy should advance then by the Hanover Road he must be delayed for an hour.

From the enemy's position to New Oxford by the York Turnpike is 15⅔ miles. He could reach there a little after noon, about an hour before the convoy can clear the place. From the crossroads 584 about 1½ miles west of New Oxford artillery fire can effectively reach New Oxford and the road for nearly a mile beyond, and, from points west of there artillery fire can reach parts of the road to be travelled by General X between Boneauville and New Oxford. Thus at least two hours' delay would have to be caused if the enemy marches by this route.

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From the enemy's position to Hampton by Hunterstown is only about one mile further than from Barlow to Hampton, so that if both columns were to travel at the same rate they would meet there. If the enemy should take this route he would have to be delayed nearly two hours; and besides, it will be noticed that the road through Hampton can be reached by artillery from near Oak Wood S. H.

The Harrisburg Road crosses the Baltimore—Carlisle road at York Springs. That place is 4 miles nearer for the enemy to reach than for the convoy; a delay of nearly four hours would have to be made if enemy should take this road, but, the distance is greater.

General A sees then that if the enemy moves directly on Barlow he cannot reach the convoy; if he moves by the Baltimore Turnpike he will have to be delayed for a short time to secure the safe retreat of General X; if he moves by the Hanover Road, he must be delayed for an hour; if he moves by the York Turnpike on New Oxford, he must be delayed for nearly two hours and the same time if he moves by Hunterstown on Hampton; and if he moves directly on York Springs he will have to be delayed four hours.

As the enemy must be assumed to be familiar with the country General A believes that he will advance either by the Hanover Road, the York Turnpike or by Hunterstown. The York Turnpike gives him his best chances; it is a good road, gives him the same margin as the Hampton route and nearly double the time margin he would have by the Baltimore Turnpike. Moreover the Hunterstown route is much of it over country roads and would bring about the conflict after a two hours' longer march—a decided consideration. The move on York Springs may be made but it will involve a still longer march, although the margin of time is greater.

General A realizes that the enemy may start before 6 A. M. and possibly march a little faster than 2½ miles per hour until checked. On the other hand General X must appreciate his situation and will push the march of the con-

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voy to the best of his ability. General A believes that his estimate of times and rates of marching is close enough for the purpose of forming his plan of action.

The country to be traversed is rolling and therefore favorable for a delaying action. Only two streams of any size are to be crossed, Rock Creek and the Conewago. The destruction of the bridges over these two streams might cause the enemy a little delay in getting his artillery and combat trains across though neither stream is large enough to retard him much; still every little delay which can be caused to the enemy will be of value.

General A is too weak relatively to risk a battle to a decision. He must therefore hinder the enemy's advance without becoming so closely engaged that he cannot get away. This will require probably more than one position to be taken.

General A must cover the Hanover Road, as well as the York Turnpike and the Harrisburg Road, as they emerge from Gettysburg. While the Hanover Road is not likely to be used it cannot be neglected. The York Turnpike will be used at first if the enemy goes by Hunterstown.

General A does not consider practicable any plan that takes him west of the town. He looks for a first position from which he can cover the three probable routes of the enemy and from which, after the position is given up and the enemy's line of advance determined, he can still march to interpose elsewhere.

The position about Benner's Hill covers the Hanover Road, and, while held, the York Turnpike. The principal objection to it is that the enemy, under cover of the town, might turn its right and while General A might in that case himself retreat by the Hanover Road, the York Turnpike and Harrisburg Road would then be left entirely open to the enemy.

General A rejects any position in front (west) of Rock Creek.

The next position that he considers is on the York Turnpike, west of hill 618. Between this hill and the small

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woods to the southwest a concealed position for his guns can be found from which they can reach with fire all the roads leading out of Gettysburg. Infantry can secure cover in front of the guns. If the enemy attempts to move by the Hanover Road General A will have here an excellent flank position and, unless the Reds make a wide turn, he will force them to drive him out before they can proceed. Either the attack or the turn will gain about all the time necessary on this road, and in addition General A can then move east and still have a good flank position from which to cause further delay.

If the enemy should attempt to go by the Harrisburg Road to crossroads 549, thence to Hunterstown, his route is also flanked and, after he gets by, General A, having the shorter route, can again interpose.

If the enemy takes the Harrisburg Road, this position covers it fully, and General A in deploying would extend to his right; the roads are conveniently located for him and he could easily interpose between the enemy and York Springs.

That the enemy will split his command and send part directly against the trains and the rest to deal with General A, does not worry the latter. This would be to the advantage of the Blues. There are enough troops with the convoy to defend it against a small force.

To take his first position on the Harrisburg Road is not considered by General A because from it he could not effectively close the Hanover Road.

The cavalry must gain touch with the enemy promptly and maintain it; it must therefore be independent at first; if later General A retreats and is pursued, the cavalry will become part of his rear guard.

As soon as his command crosses Rock Creek all the bridges in the vicinity will be prepared for destruction and destroyed as soon as the Blue cavalry has crossed. No matter which way he retreats he will destroy all bridges in front of

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the enemy. The delay thus produced may not be great; still it will be something.

Communication must be kept up with General X's column, for General A should do no more fighting than is necessary to enable the trains to escape.

A strong advance guard is not necessary in the march to the first position. It is desirable, however, not to break organizations. General A would put a regiment of infantry in the advance guard except for the reason that he does not want his artillery so far back. There can be no use for artillery with the advance guard—the danger point is not in front.

General A therefore decides to make the cavalry independent and send it toward the enemy to cover his flank and gain information. To march the rest of his command directly to J. Warner's place on the York Turnpike and prepare to meet the enemy, whatever his route. To have an advance guard of one battalion, 4th Infantry, with the machine gun platoon and most of the scouts. To use no flank guard except the cavalry, as the enemy is still at some distance and the march short.

From the crossroads north of J. Musser to Gettysburg is 2½ miles and it is nearly 1½ miles from there to the position.

The length of the brigade is	2800 yards.
The artillery battalion	1030
Distance frnm advance guard	600
Total	4430 yards.
Less one battalion, plus interval	230
	4200 yards.

or nearly 2½ miles.

If, then, the advance guard clears the crossroads at 6 A. M. and the main body follows at 600 yards, the tail of the main body will be the equivalent of five miles from Gettys-

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burg. If the enemy starts at the same time and moves at the same rate he will be but one mile behind the tail of General A's main body at Gettysburg.

However, the artillery, following the 1st Battalion, will have reached its position as the leading element of the enemy reaches the ridge one mile west of town and at the same time that General A's last element will be in the town.

This is hardly satisfactory; but General A's column is shorter by half than the enemy's and he has better roads and only a short march to make. He can push the march faster than the enemy and his cavalry should cause some delay and enable him to be practically in position by the time the enemy reaches the ridge west of town.

His general plan is: to try and hold the enemy the necessary time without becoming too closely engaged; after the first encounter to keep in front of the enemy, fighting a rear guard action, destroying the bridges and using every means at hand to cause the enemy delay until the convoy is safe.

As 6 A. M. was fixed in the orders of the night before as the starting time it is not probable that General A can get out any earlier.

At 5.40 A. M. he assembles his field officers and staff and issues a verbal order, which, if written, would be as follows:

2d Requirement:

2d Brigade, N. Y. Inf.,
Camp South of Gettysburg,
2 Oct. 11, 5-40 A. M.

Field Orders
No. —

Troops

a. Independent Cav.:
Major B
1st Sq. 4th Cav.

1. A hostile force of about two brigades infantry, a regiment of artillery and squadron cavalry, camped last night 6 miles west of here on the CHAMBERSBURG ROAD. It is believed to have our convoy as objective.

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The convoy, under escort of the 1st Brigade, will march at 6 A. M., by BONEAUVILLE, NEW OXFORD, and CARLISLE—BALTIMORE ROAD, on CARLISLE.

b. Advance Guard:
Major C
1st Bn. 4th Inf.
M. G. Plat. 4th Inf.
Det. 16 Mtd. Scouts

2. This command will cover the movement and march provisionally to the J. WARNER farm about 1½ miles northeast of GETTYSBURG on the YORK TURNPIKE.

c. Main Body—in order of march:
4th Inf. (less 2 bns. M. G. Plat. and 16 Scouts)
1st Bn. 2d F. A.
1 bn. 4th Inf.
5th Inf.
6th Inf.

3 **a**. The independent cavalry will advance at a trot and gain contact with the enemy, and delay him as much as practicable without becoming closely engaged.

b. The advance guard will clear the road crossing just north of here by 6 A. M. and march through the town by the YORK TURNPIKE to the WARNER place, keeping up communication with the convoy. The march will be pushed as rapidly as practicable.

c. The main body will follow at a distance of about 600 yards.

d. The outposts will be relieved as soon as the advance guard has crossed the line of supports; they will then close in on the road and take their place in the column.

4. The field trains will proceed at once to join the convoy.

5. Reports will reach me at the head of the main body.

A,
Brigadier General.

Verbally to assembled officers. Copy to General X.

Note. The first order is assumed to have designated who were to assemble to receive orders.

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PROBLEM 18

On the Flank of the Line of Battle

GETTYSBURG GENERAL MAP
HUNTERSTOWN, NEW OXFORD, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

A Blue, eastern, field army, in friendly territory, was bivouacked the night of October 5 / 6 north of the Conewago and east of the Harrisburg Road. A Red invading army somewhat stronger was a short distance west of it.

A Blue force consisting of the 1st Brigade (1st, 2d and 3d Regiments of Infantry), 1st Squadron, 1st Cavalry, 1st Battalion, 1st Field Artillery, 1st Ambulance Company, and a section 1st Signal Company, under command of Brigadier General A, has been detached from the 1st Division of this army to guard Emmitsburg but was relieved October 5th and ordered to rejoin its division near Heidlersburg.

General A bivouacked October 5 along the Low Dutch Road, southwest of Mt. Vernon S. H. He resumed the march by the road to Hunterstown, at 6 A. M. on October 6, with the 1st Infantry and the cavalry as advance guard, followed by 1st Battalion, 2d Infantry, artillery (fighting batteries only), 2d Infantry (less 1st Bn.), 3d Infantry, artillery combat trains, ambulance company, field trains.

The cavalry had started out at 5.30.

At 6.15 some firing was heard to the front and shortly after a message was received from the cavalry to the effect that a hostile force had been seen moving south past Granite Hill Station; that it was estimated at 4 battalions, infantry,

*Army School of the Line, 1911-12, Course in Tactics—Part II, Map Problem No. 5.

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and 2 batteries; and that a small force of cavalry, estimated at one troop, had been encountered and driven in on the main column.

Patrols report that there are no other hostile troops south of Hunterstown and that those reported are massing behind the ridge southwest of Granite Hill.

The infantry point of the advance guard has just passed road fork 548.

General A, at the head of the reserve of the advance guard, is at 530 and has halted the column when he receives the following telegram from Boneauville:

1st Field Army,
Heidlersburg,
6 Oct. 11, 6 A. M.

General A:

Enemy advancing evidently to attack. Left of our line will be a short distance west of Belmont S. H. extending thence to north.

Cavalry reports force of all arms moving southeast. Prevent their reaching our flank and join this army as soon as practicable, preferably so as to strike enemy's right flank.

X,
Chief of Staff.

Five minutes later (6.40) heavy artillery fire is heard to the north.

Friendly inhabitants report Swift Run unfordable north of York Turnpike and bridges over this stream gone.

Required:

1. General A's estimate of the situation.
2. His orders.

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Solution, 1st Requirement:

General A's mission is: first, to protect the left flank of his own army from any interference by this hostile force now near Granite Hill; second, to get into the main battle with his detachment and preferably in such manner as to strike the enemy's right. In other words, to help the main army all he can.

There is little doubt that the force reported by the chief of staff and that seen by his own cavalry are the same; still it is necessary that he keep careful watch and have timely warning in case there should prove to be another force in his vicinity.

The hostile force near Granite Hill consists of 4 battalions of infantry against his 9, 2 batteries against his 3, and 1 troop against his 4; General A thus has a decided superiority in strength and is operating in friendly territory. This latter gives him a distinct advantage for, with a command the size of his, if he should be defeated and cut off from the main army he can retreat in any direction and still save his troops.

The enemy has undoubtedly heard of General A's movements and has sent a weaker force to keep a stronger out of the battle. He has selected his present position as the best in sight and one likely to be attacked; but he is probably holding his men in hand and ready to move to the right or left should General A attempt to march around the position.

The position taken by the enemy is a short ridge extending to the southwest from Granite Hill. The latter well secures his left flank; the other flank of the position is not so well located; it is lower and the field of view and fire is obstructed by the open forest to the southwest.

An advance from General A's position, when he receives the message, directly to the position of the enemy would be over open ground. An advancing line would find here much cover in places, from the many folds in the ground, but not enough to prevent the advance from being costly.

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From the position, east to where the Swift Run becomes impassable, is only 5400 yards and the country between is overlooked from Granite Hill. There are good roads leading around that way by which General A could join his main army if not prevented by the enemy.

Two miles west of General A lies the Wolf Hill ridge, rough and heavily wooded, crossed by the Hanover Road. This wooded ridge ends about 1½ miles north of where the road crosses it. Leading north in the western edge of these woods is a wood road by which troops could march and turn the hostile position from the west. Two roads east of this ridge are likewise available but more exposed. By any one of the three roads considerable cover can be obtained for troops advancing to the attack.

From the hostile position to the left flank of the Blue army is a little over 5 miles.

From 530 crossroads directly to the hostile position is about 4000 yards. By the road west, then north by the wood road west of the ridge, to the hostile position it is about 5 miles. By the road west then north by the road 550—587 it is about 4 miles; and by the road 546—588 about 3 miles.

General A has several courses open to him. In coming to a decision he fully appreciates that the main battle to the north is the important thing and that all detachment fights are of little value except as they contribute to a victory of the main force. He concludes that the Red detachment near Granite Hill represents an effort on the part of the Red commander to keep a greatly superior Blue force out of the fight by means of an inferior Red force and thus to increase his superiority on the main battlefield.

General A may march to the northeast, try to avoid a fight and join the main army as promptly as possible; for this, two routes are to be considered: to turn to march east of Swift Run and to keep west of it. To march around Swift Run and cross the Conewago by bridge requires a march of over 13 miles; in the mean time the hostile detachment is

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only 5 miles from the Blue left flank. General A rejects this course.

He can move west of Swift Run and east of the hostile position. If this could be done without a fight it would undoubtedly be the best. General A sees, however, that unless he marches across rough country off the roads he must cross the York Turnpike within 3000 yards of the enemy's position. A flank march of this kind with an impassable obstacle on the other flank is impracticable.

To march around the enemy by the other flank is doubly objectionable; the route is as long as by the eastern one and would be a flank march between two hostile bodies.

General A then recognizes that he must drive this hostile detachment out of his way before he can join in the main battle.

He can attack straight to his front. The advantages are that it is direct, simple and can be done more quickly than any other. The disadvantage is that it will be very costly.

He can attack enveloping the enemy's left. This will tend to push the detachment back on its main force. The disadvantages of this plan are that the enemy's left flank, resting on Granite Hill and the woods to the north, is particularly strong, much stronger than the other flank, and that if the pressure is brought from this side the enemy will probably hold more tenaciously for, if forced out, he is driven toward his main army.

On the enemy's right, his flank is weak and the line of advance is just as good if not better for General A. The enemy is in hostile territory and very inferior in strength. With Swift Run on his right he will naturally be nervous about being driven in that direction and will not hold with the same tenacity.

General A does not like the forest that will be on his left flank if he attacks this way, especially as the enemy's main army is north of it. That he places the hostile detach-

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ment partially between himself and his main army is of no importance. If General A draws off enough hostile forces to drive his own Blue detachment to the southwest he will have done good work and he feels sure he will be able to supply his command and to rejoin the army later. He has the advantage of being in friendly territory.

Good artillery positions are not plentiful but General A decides that near hill 606 will answer his purpose; to reach this the guns must move by the 452—550—587—road, longer than the road he would use for his infantry, and an infantry escort will have to be sent with them. The 530—550 road is too exposed to be used. It is better to turn west at 516 where the head of the main body now is. Some troops, however, will have to be sent against the front to hold the enemy to his position.

On the west flank the ground is not very favorable for cavalry action, yet it is the more important flank to watch. Reinforcements must not be allowed to reach the enemy without General A's knowledge. Communication must be kept up with the main army; this at present is possible by telegraph through Boneauville; if this means fails then the cavalry must be counted on.

If General A makes his frontal attack by having the advance guard continue on its present road and deploying when necessary, that will answer. The main body turning west can again turn north at 546 or 550. The deployment should be made between these two roads. The artillery will gain position easier and better if it goes by the 550 road, but it is longer, and, if all the command goes that way, it leaves the advance guard widely separated from the main body. The artillery could go by the 550 road, the infantry by the other, but in this case an escort should accompany the artillery.

General A therefore decides to attack, enveloping the enemy's right flank; to have the advance guard regiment

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continue its advance toward 618, deploying when necessary, left on the road, and advance against hill 657 when the other attack is started; to have the advance party continue on toward Guldens as flank patrol keeping abreast of the regiment; to order the artillery to go into position near hill 606; to march the leading battalion of the main body and the artillery by the 550 road, the infantry battalion to escort the artillery, to furnish flank protection and to form part of the reserve; with the remainder of the main body, to move north at 546, deploying when necessary with the right on this road, and to advance to the attack against the enemy's right; to hold most of the cavalry on his left, only sending to the right sufficient for patrolling and to maintain connection with main force in case telegraphic communication fails.

At first the separation of the two attacks is rather great, but by the time the infantry opens fire they will be much closer.

It is too early to designate a dressing station.

2d Requirement:

General A, having had his regimental and artillery commanders and staff assembled, at 6.50 A. M., issued his orders, which, if written, would be as follows:

Detachment, 1st Division,
Crossroads near Mt. Vernon S. H.,
6 Oct. 11, 6-50 A.M.

Field Orders
No. —

1. A hostile detachment of all arms of not more than half our strength is taking position near GRANITE HILL.

Our main body is probably now engaged with the enemy, the line extending from near BELMONT S. H. north.

2. We will move to attack the detachment near GRANITE HILL and the attack must be pushed vigorously, time is important.

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The previous march conditions now cease.

3 **a**. The artillery, escorted by the 1st Battalion, 2d Infantry, will move by 542—550 and gain position near hill 606 and support the attack.

The 1st Battalion, 2d Infantry, will provide protection for our left flank.

b. The 1st Infantry will advance by 530—618 deploying when it becomes necessary with left on 548—618 road and attack in conjunction with the 2d Infantry.

The present advance party will continue along the 548—562 road and secure our right flank.

c. The 2d Infantry (less 1st Battalion) will advance by 452, thence across country and by the 546—588 road, deploying when necessary with right on that road, and attack the enemy's right.

d. The cavalry will cover our left, reconnoitering well to the north and west. One troop will be sent to our right flank and will maintain communication with our main army by telegraph through BONEAUVILLE if practicable, otherwise by patrols. Six men of this troop will report to me.

e. The 3d Infantry will constitute the reserve under my orders. The regiment will follow the 2d Infantry until it deploys.

f. The signal detachment will connect me with the 1st Infantry.

4. The field trains will halt off the road where they now are. The ammunition company will halt for the present at 530.

5. I will be with the reserve.

A,
Brigadier General.

Verbally to assembled officers. Copy to Major G, commanding cavalry. Report by telegraph to chief of staff.

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PROBLEM 19*

As a Flank Guard

GETTYSBURG GENERAL MAP
GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

The 1st Blue (Western) Division, in hostile territory, was defeated near Reistertown on May 1st and commenced its retreat via Littlestown—Gettysburg to the frontier.

On the afternoon of May 3d the pursuing troops from Reistertown had been left nearly a day's march behind. This same day information was received that a hostile force of nearly a division was approaching from York.

That night the 1st Blue Division bivouacked about Littlestown, with a detachment, under Brigadier General A, at Whitehall, furnishing the outpost to its north and east. General A's detachment consists of the 1st Brigade, 1st Cavalry (less 3d Squadron), 1st Battalion, 1st Field Artillery, and 1st Ambulance Company.

At 2 A. M. on May 4th General A receives the following message from the division commander:

1st Division, Littlestown,
4 May 11, 1-20 A. M.

To General A:

We have received reliable information that a hostile force of all arms, nearly a division in strength but weak in cavalry, is in bivouac at New Oxford and will march this morning to intercept our retreat.

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*Army Service Schools, Special Class for Field Officers, 1912, Map Problem No. 1—2d series.

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This division will march by the Baltimore Turnpike and Chambersburg Road, trains starting at 5 A. M. followed by the troops.

Your command will cover the march as right flank guard.

Your field train will join the division trains at the Tollgate northwest of Littlestown by 6.30 A. M.

Z,
Major General.

Required:

1. General A's estimate of the situation.
2. General A's order.

Note: Weather fair, roads in good condition.

Solution, 1st Requirement:

General A's mission is stated in his order: to cover the march of the division as right flank guard.

The enemy is reported as nearly a division and, at the present time, at New Oxford. General A has only one brigade reinforced by a battalion of artillery and two squadrons of cavalry.

The enemy, being in friendly territory, has a decided advantage in this case as to gaining information; he also is greatly superior in strength. On the other hand he must first drive General A out of his way, and afterwards reach the main column and defeat it, or stop its retreat until the other Red forces can arrive. General A wins if he can merely cause sufficient delay to enable the main body to get past. He does not have to win a battle. If General A allows himself to become too closely engaged he will at the least suffer heavy loss.

The enemy will undoubtedly move promptly and energetically against the Blues. There are four probable routes that he can follow:

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1. Directly on Boneauville—distance about 6 miles.

2. To Guldens, thence south—distance to Hanover Road 7½ miles.

3. West to Granite Hill, thence south to Hanover Road—about 8¼ miles.

4. Directly on Gettysburg—about 9½ miles.

From Littlestown to Two Taverns is 4½ miles; to cross-roads 525 is 6 miles; to between White Run and Rock Creek 7 miles; and to Gettysburg, 10 miles. The trains of the division are six miles long and to this must be added:

2 brigades of infantry, - -	5000	yards.
1½ regiments F. A., - -	3180	"
Sanitary troops (less amb. co.) -	1560	"
1 battalion engineers - -	500	"
1 signal company - - -	180	"
Total - - - -	10420	" = 6 miles.

Thus the length of the main column, including trains but without rear guard distances, is 12 miles. In other words, if the trains start at 5 A. M., it will be about 10 A. M. before the tail of the column quits Littlestown; 12 noon when it passes Two Taverns; and 2 P. M. before it can clear Gettysburg.

If the enemy starts from New Oxford at 6 A. M., his advance, if not delayed, would reach Boneauville by 8.20 and by 9 A. M. would be sufficiently deployed to the south to stop the division, since the head of the column of troops would be just entering the place. The Red troops, starting at 6 A. M., could reach a position east or southeast of Gettysburg from which to attack by 10 A. M., could be deployed before noon, and attack the head of the troop part of the division column.

The enemy, therefore, has about an equally good chance, so far as time is concerned, by any one of the routes considered.

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It would then be to his advantage, other conditions being equal, to strike as soon as practicable while his troops are as fresh as possible.

General A believes the enemy will start about 6 A. M. and move on Boneauville and that he must therefore delay him about three hours. General A realizes that the enemy may start earlier and that he may take one of the other routes. The first contingency only increases the time General A must delay the Reds; the second makes it imperative that his plan be such that he can adapt it to any route the enemy may take.

To the east and northeast of Boneauville General A sees good positions that he can occupy to delay the enemy if the latter marches in that direction. The Hanover Road leads from here directly to Gettysburg. Near this road, west of Mt. Vernon S. H., is hill 571, which will afford him a good position if the enemy comes by Guldens and leaves him still over 2 miles from his main body.

There are two roads leading from the York Turnpike west of Granite Hill. A position north of Hanover Road near hill 606 would close both of these and give General A a fairly good line of retreat to the ridge Benner's Hill—hill 566, where he could check the pursuit. This position also blocks the direct route by York Turnpike.

In his retreat from here he falls back through the hostile town of Gettysburg. The enemy will hesitate to shoot up his own town filled with women and children. This will be an advantage to General A.

General A therefore believes his best course is to move to Boneauville, halt his command well closed up there with march outpost well to his north and east, ready to deploy to meet the enemy by whatever route he may come if he moves, as General A expects, directly on that place.

General A's cavalry will be out early, gain contact with the enemy and give prompt information of the route taken.

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If the enemy moves by the York Turnpike, General A, as soon as this fact is assured, will move to near 530 and follow the same plan there. If the enemy continues on toward Gettysburg, General A must do the same, halting again between 546—550—Benner's Hill. From the last place General A would have to gain all the necessary time and then follow the division as rear guard.

General A is superior in cavalry and his success will depend largely on the proper use of this. He must know how the enemy is advancing.

General A therefore decides: to send his cavalry out by 5 A. M. to gain contact with the hostile division, to keep him promptly informed of its movements and to delay its march as much as possible without becoming closely engaged; to march the remainder of his force to Boneauville, massing it with head of column at stream-crossing west of town. His next move will depend on the information received concerning the enemy.

2d Requirement:

It is assumed that the command was previously ordered to be ready to move at 5 A. M.

At 4.30 A. M., General A issued his march order, which, if written, would be as follows:

Detachment, 1st Division,
Whitehall,
4 May 11, 4-30 A. M.

Field Orders
No. 6

Troops
Independent Cav.:
Col. F.
1st Cav. (less 3d Sq.)

1. A hostile force of nearly a division but weak in cavalry is now in bivouac near NEW OXFORD.

Our division will continue its retreat through GETTYSBURG starting at 5 A. M.

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Advance Guard:
Col. G.
1st Inf.

Main Body—in order of march:
1st Bn. 2d Inf.
1st Bn. 1st F. A.
2d Inf. (less 1st Bn.)
3d Inf.
1st Amb. co.

2. This command as right flank guard will march provisionally to BONEAUVILLE.

3 **a.** The independent cavalry will start at 5 A. M., advance toward NEW OXFORD, gain contact with the enemy and delay his march as much as practicable without becoming closely engaged.

Prompt information must be furnished me of enemy's line of advance.

b. The advance guard will clear the crossroads at the north edge of the village by 5-30 A. M., and follow the main road to BONEAUVILLE.

c. The main body will follow the advance guard at about 800 yards.

d. The outposts will stand relieved when the advance party of the advance guard crosses their line of observation; they will then close in on the road and take their place in the column.

4. The field train will be formed head at crossroads 593 south of here at 5-30 A. M. and then proceed to join the division trains at the TOLLGATE northwest of LITTLESTOWN by 6-30 A. M.

5. I will be with the reserve of the advance guard.

A,
Brigadier General.

Verbally to the assembled subordinate commanders and staff. Copy to division headquarters by Lt. G.

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PROBLEM 20*

Attacking a Flank Guard

GETTYSBURG GENERAL MAP

NEW OXFORD AND BONEAUVILLE THREE-INCH SHEETS

General Situation:

The boundary line between two hostile states, Blue, east, Red, west, is about twenty miles west of Gettysburg.

A Red invading army was defeated near Reistertown August 30th, and one division is retreating by the Baltimore Turnpike through Gettysburg; the balance of the Red army is retreating southwest on Harper's Ferry.

Special Situation—Blue:

On September 1st, after a hard march, the 1st Brigade, 1st Division, Blue Army, reinforced by 1st Battalion, 2d Field Artillery, 1st Squadron, 3d Cavalry, and 1st Ambulance Company, bivouacks about New Oxford. At 11 P. M., General B, commanding this force, receives the following message:

1st Field Army,
Westminster,
1 Sept. 11, 9-30 P. M.

General B,
New Oxford.

The hostile army is still retreating. One division moving on Chambersburg camps tonight at Littlestown. Our 2d Division which is in pursuit was unavoidably delayed and tonight camps about 15 miles

*Army Service Schools, Special Class for Field Officers, 1912, Map Problem, No. 5—2d series.

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southeast of Littlestown and will continue the pursuit in the morning.

The general commanding directs that you advance through Boneauville tomorrow morning and delay the hostile column until, with the assistance of the 2d Division, it can be destroyed.

X,
Chief of Staff.

Pursuant to the foregoing instructions, General B commenced his march at 5.30 A. M. The cavalry, made independent, was to advance through Boneauville and find the enemy; the advance guard was composed of the 1st Infantry.

The Blue cavalry soon encountered superior hostile cavalry, estimated at about 6 troops, and, except for a few patrols, could accomplish little. The hostile cavalry caused some delay to the march, but the advance guard was well handled and the delay was not serious.

As the head of the reserve of the advance guard reached Kohler S. H. General B, who was at that point, received reliable information that the hostile main body was advancing on Gettysburg by the Baltimore Turnpike and that about two regiments of infantry, a battalion of field artillery and six troops of cavalry had been detached and were at Boneauville.

Ten minutes later, at 6.30 A. M., General B received reports from officers' patrols that the enemy was taking up a position on ridge 611—627, that details were felling trees in the small creek bottom in front of the position and that some intrenching was being done.

Required:

1. General A's plan of action and, briefly, his reasons.
2. His order.

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Solution, 1st Requirement, General A's Plan:

To attack at once, enveloping the enemy's right.

The 1st Infantry to continue the march, deploying behind the ridge west of Brush Run, and advance to the attack astride the road. Advance to be pushed home in conjunction with the 2d Infantry.

2d Infantry to turn off at Kohler S. H. and move south to roadfork 555, thence across country to Fleshman, thence by farm road to 612, there deploy and move directly against hill 627.

3d Infantry to form the reserve and follow the 2d to near 612.

The artillery to follow the leading battalion of the 2d Infantry as far as 555, thence east and take position behind ridge south of 606 crossroads.

The main body of the cavalry to cover his left, sending strong patrols to his right.

Ambulance company to farm house north of 555 to await orders.

Trains to remain at New Oxford.

Reasons:

General B must attack at once and vigorously, or fail in his mission. He is ordered to delay the retreating division; this detachment blocks his road and must be driven off before he can do it. An effort to march around it would merely result in delay; the detachment will still be in his front in all probability if he attempts such a move.

He has ample superiority in strength to justify an attack. He must do it promptly; the enemy is beginning to intrench—the more time he is given the stronger he will make his position and the less time General A will have in which to reach the hostile division and delay it.

General B extends to his left because of the artillery position near 606, which is so conveniently reached and from

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which the infantry attack can be efficiently supported; it affords a good line of approach, mostly by road, and the enveloping regiment can deploy under cover at less than 1000 yards from enemy's position. Strategically, it is the better flank to attack.

The 1st Infantry, now the advance guard, has already passed the roadfork in part and can most conveniently deploy first to cover the movement of the rest of the command.

The 2d and 3d are employed according to their positions in the column as thus time is saved.

The reserve is well toward the left, for if there is any danger to a flank it is on his left, and it is to this flank that General B will be more likely to want to extend his line if he wants to extend it at all.

The position of the artillery is concealed, is one that can be reached by road, it has a range of between 3000 and 3500 yards, and the roads leading from it are convenient for the further advance.

The main body of the hostile division is to our south; on this flank therefore is it better to have our cavalry.

The ambulance company is on a convenient road by which it can reach both wings of the battle line. It is too early to order it to establish a dressing station. Where the heavy fighting will take place, or even if there will be any, is yet uncertain.

The trains are left at New Oxford, as they should not cross the Conewago until the fight is decided.

2d Requirement:

General A, having previously assembled the subordinate commanders at the Kohler S. H., at 6.40 A. M., issues his order for attack which, if written, would be in the following form:

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Detachment, 1st Division,
Kohler S. H.,
2 Sept. 11, 6-40 A. M.

Field Orders
No. 5

1. The hostile division that camped last night at LITTLESTOWN is continuing its retreat on GETTYSBURG, with a flank detachment of less than a brigade of infantry, a battalion of field artillery and about 6 troops of cavalry, thrown out toward us. This hostile detachment is at present taking up position on the ridge 611—627, nearly three miles to our front.

2. We will attack at once enveloping the enemy's right.

Present march conditions cease.

3 **a**. The 1st Infantry will continue its advance on this road until across BRUSH RUN and then deploy astride the road. The attack will be pushed home in conjunction with the attack of the 2d Infantry.

b. The 2d Infantry will take the road leading south from this point to 555, thence across country to FLESHMAN and by the farm road to 612. It will deploy behind ridge west of 612 and advance directly against hill 627.

c. The 1st Battalion, 2d Field Artillery, will retain its present place in column in rear of the 1st Battalion, 2d Infantry, as far as crossroads 555 and will there turn west and take position behind the ridge south of 606 and support the attack.

d. The 3d Infantry will constitute the reserve under my orders. It will follow the 2d Infantry to 612 and there await further orders.

e. The 1st Squadron, 3d Cavalry, will cover our left flank, reconnoitering well toward BONEAUVILLE and the roads south of that place.

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4. The ambulance company will proceed to the bend in road about 200 yards north of 555.

The trains will remain at NEW OXFORD.

5. I will be at orchard northwest of GULDER.

A,
Brigadier General.

Verbally to commanders of infantry regiments, artillery battalion, and staff. Copy by Corporal B to the commander of the cavalry squadron.

The right flank needs careful reconnaissance. As it was not ordered by the brigade commander the commander of the regiment on that flank must attend to it. This being the case he should send there nearly all his mounted scouts in addition to a dismounted detachment. Had General A had any doubt that the colonel, 1st Infantry, would not properly protect this flank, instructions for it would have been included in his order.

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PROBLEM 21*—Troop Leading

Conduct of the Attack

GETTYSBURG GENERAL MAP
NEW OXFORD AND BONEAUVILLE THREE-INCH SHEETS

Situation:

As in Problem 20 and its solution.

Required:

1. The orders of the Colonel, 1st Infantry.
2. The orders of the Major, right battalion, 1st Infantry.
3. The leading of the mounted scouts of the 1st Infantry.
4. The leading of any infantry detachment sent out on the right flank.

Solution, 1st Requirement:

Colonel B, 1st Infantry, on receipt of his order from Brigadier General A, rides forward rapidly and, joining Lieutenant X, commanding the scouts, gives him the following order:

> Lieutenant, the enemy has taken up a position on the ridge 611—627, about two miles to our front. This brigade will attack at once, enveloping the enemy's right. This regiment will be on the right, the 2d on the left, the 3d in reserve, the artillery near cross-

*Army Service Schools, Special Class for Field Officers, 1912, Map Problem No. 1—Troop Leading.

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roads 606, the cavalry on our left. We shall deploy on the far side of Brush Run and move to the attack.

Leave six mounted scouts with me, take the rest, move north by the farm road just behind that ridge (pointing to 596) to the York Turnpike, thence west and cover our right. An infantry detachment will also be sent on our right, but not so far out.

The colonel then rides forward to the support and, as it approaches the ridge 612—614, halts it and has the leading company (A) deploy at wide intervals along the ridge and directs that the column close up in line of columns.

He then takes his majors and staff to the orchard at 612, points out the position and line of attack, and then issues the following orders:

The enemy is holding the position just pointed out. This brigade will attack at once, enveloping the hostile right. This regiment attacks along this road, the 2d against the enemy's right, the 3d in reserve in rear of the 2d. The artillery will support the attack from the crossroads (pointing to 606). Our cavalry will be on our extreme left. The scouts, under Lieutenant X, are covering our right.

Major G: your battalion (1st) will deploy on a front of about 300 yards, left at orchard, and advance against the western knoll and the col between that and the middle knoll.

Major H: your battalion (2d) will deploy on a front of about 300 yards with right on this road and advance against the middle knoll.

Major K: your battalion (3d) will constitute the reserve and will at first take position just behind this ridge in rear of the right of our line. As soon as the attack has passed the clump of trees to our right

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front, you will advance the reserve there. You will send a platoon under an officer by that roadfork (pointing to 550) from there west to near the roadfork a mile farther west with instructions to cover our right. Two mounted scouts will accompany it.

Lieutenant Y: take your machine guns to the southern edge of those trees (pointing to 614) and find a good position and support the attack. Remember the artillery is right behind you.

To the Adjutant: Have two of the mounted scouts keep up communication with the left column and send two with the right flank detachment; assemble the others and the orderlies near the reserve. The band will report to the surgeon. Regimental aid station at first at the farm house south of this orchard.

Empty ammunition wagons to New Oxford.

Deploy at once, I will give the signal to advance.

2d Requirement, Orders of Major G:

He rejoins his battalion and orders all the extra ammunition issued and the wagons sent back to New Oxford; he then assembles his captains, points out the enemy's position and issues the following orders:

The enemy is in position as indicated. This brigade attacks at once enveloping the enemy's right. Artillery near the orchard (pointing), our cavalry will be on our extreme left, the scouts of this regiment and a platoon of infantry on our right.

This regiment forms the right of the line, this battalion the right of the regiment. The 3d Battalion, in reserve, will be in our rear.

B and C Companies will form the firing line and deploy—B on the left with its left at that bend in the

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road at the orchard. Each company on a front of about 150 yards. B Company's objective will be the col between the western and middle knolls of the enemy's position, C Company's objective the western knoll. C Company will furnish a patrol of two men to observe to our right for signals from the covering detachments.

As the enemy's line makes a decided angle with this ridge behind which we deploy, the left will hold back and the right advance changing front about 45° left after the advance begins.

Companies A and D will form the support. Company A will assemble as soon as the firing line is deployed.

Regimental aid station at that farm house.

Deploy at once. I will give the signal to advance.

3 d Requirement, Leading of the Scouts:

Lieutenant X, on receipt of his orders from the colonel, assembles his scouts, except those then on the right flank (the scouts on the right would be picked up as the detachment advanced), details six to report to the adjutant, and then says to those assembled:

> The enemy is in position on the 2d ridge beyond here. Our brigade will attack at once, our regiment on the right along this road, the 2d on the left, 3d in reserve. Artillery near the center, cavalry on the left flank. We cover the right.
>
> Sergeant take three men and trot out ahead as advance patrol. Move north by that farm road until you reach the turnpike about a mile from here then west about 2 miles. I will follow with the remainder of the detachment at about 400 yards.

On reaching 552 a corporal and 3 men are left, 1 man on hill 562, 1 at northern end of nose toward 506, the latter to

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watch the roads crossing at 506. The corporal and the other man at 552.

Lieutenant X then goes on to roadfork 586, leaving a standing patrol of two men near 573 to observe the roads in that vicinity. At 586 a patrol of two men is sent to 628 and one man toward R. F. Weaver, to locate the infantry covering detachment, and one where he can see Salem Church. The Lieutenant and the remaining men take post at 586.

All would keep as much concealed as practicable and yet fulfill their mission.

4th Requirement, Leading of the Infantry Right Flank Detachment:

Lieutenant Y, Company D, commanding platoon, is sent to cover the right flank. On receipt of his order he moves his platoon out of the company and gives the following order:

> The enemy is in position on the next ridge. Our brigade will attack, our regiment on the right, 2d on the left, 3d in reserve. Artillery near center. Our cavalry covers our left flank. The mounted scouts of this regiment are to our north. This platoon forms the combat patrol on the right.
>
> Sergeant M, take the leading squad and, as advance guard, move north under cover of this ridge until opposite that farm (pointing to building northwest of 593), then cross to that roadfork (pointing to 550), then follow that road west for about a mile. I will follow at about 200 yards.

Arriving at 582, a patrol of two men is posted on 593.

At the Weaver place a patrol of two men is posted on the roof or in a second story window to observe toward Salem Church.

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Lieutenant Y then moves his platoon south to near the southern edge of woods near farm road, sending a patrol of 4 men and a non-commissioned officer to 572. Men are posted so as to see his standing patrols and to communicate signals. All are concealed as much as practicable.

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PROBLEM 22*—Troop Leading

An Attack by a Brigade in Division

GETTYSBURG GENERAL MAP
NEW OXFORD AND BONEAUVILLE THREE-INCH SHEETS

PART I

Situation:

The Susquehanna River forms part of the boundary between hostile states, Blue to the north and east and Red to the south and west.

The 1st Blue Division under General A is advancing from Columbia toward Frederick to join the main Blue army which is confronting the main Red army in the vicinity of Libertytown.

On the night of June 1st, General A's command camped east of New Oxford with outposts furnished by 1st Brigade along the Little Conewago.

By 4.45 A. M., June 2, positive information is received that a hostile force consisting of one brigade of regular and four or five regiments of newly raised infantry, one regiment of regular and several batteries of newly raised field artillery, and about a regiment of cavalry, but only one squadron of it regular, has taken up a position on the ridge 611—613—627.

General A decides to advance and attack.

The assembly order issued the evening before required the troops to be ready to march at 6 A. M., adjutants to as-

*Army School of the Line, 1911-12, Map Problems Nos. 5 to 8—Troop Leading.

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semble for orders at 5 A. M., at which hour the following order is issued:

1st Division,
New Oxford,
2 June 12, 5 A. M.

Field Orders
No. 8

1. A hostile force of nearly a division, but only about one-third of it regulars, the remainder new troops, has taken up a position on the ridge 611—613—627.

2. We will attack the position enveloping the enemy's right.

3. The 1st Brigade, reinforced by the 1st Regiment, Field Artillery, will advance by the road KOHLER S. H.—BRUSH RUN S. H. and attack the portion of the hostile position north of GALLAGHER in conjunction with the attack of the 2d Brigade.

4. The 2d Brigade, reinforced by 2d Regiment, Field Artillery, will advance by SQUARE CORNER and attack enveloping the hostile right.

5. The 1st Cavalry will move on WHITEHALL and cover our left, reconnoitering to the enemy's right and rear. Strong patrols will be sent toward GRANITE HILL to reconnoiter on enemy's left and rear.

6. The 3d Brigade and 1st Battalion Engineers will constitute the reserve under my orders and will follow the 2d Brigade to 573 and there await orders.

7. The signal company will connect the two attacks with GULDER.

8. The 1st Ambulance Company to KOHLER S. H., 2d Ambulance Company to BREASHNER, 3d and 4th Ambulance Companies to AIKENRODE. NEW OXFORD will be the collecting point for the slightly wounded.

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9. The field trains will be assembled at 7-30 A. M. east of NEW OXFORD. The other trains will remain where they now are.

10. Messages to GULDER.

A,
Major General.

Copies to officers sent to receive them.

Required:

1. All orders of Brigadier General B, up to just after the 2d Brigade begins its attack, under the supposition that the enemy is found in position as reported and that hostile artillery fire is opened on General B's troops as they appear on hill 609.

2. Assuming the 1st Infantry to be the leading regiment in its brigade, all orders of its colonel up to the same time.

Solution, 1st Requirement:

At 5.30 A. M. Brigadier General B, with his staff, the three infantry colonels of his brigade and the colonel of the 1st Field Artillery, are near Diehl's Mill where he issues the following verbal order:

> The enemy is holding a position on the ridge 611—613—627; his strength is about a division but only about one-third are regular troops, the remainder are new troops.
>
> This division will advance in two columns and attack enveloping the enemy's right. The 2d Brigade and 2d Field Artillery will advance on Square Corner and make the enveloping attack. The cavalry will send strong patrols toward Granite Hill, the main body on Whitehall. The 3d Brigade and Battalion

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Engineers will constitute the reserve and will be in rear of the 2d Brigade.

This brigade, reinforced by the 1st Field Artillery, will advance by the Kohler S. H.—Brush Run S. H. and later attack.

This brigade will march at 6 A. M. as follows:

Advance guard, 1st Infantry (less 3d Battalion), will start at 6 A. M. from Diehl's Mill and follow the road prescribed. Careful reconnaissance will be made to our right and connection kept up with the other column.

The main body, in the following order, will follow the advance guard at 600 yards: 3d Battalion, 1st Infantry, 1st Field Artillery (less combat train), 2d Infantry, 3d Infantry, artillery combat train.

The outpost will stand relieved as soon as the advance party crosses the line of supports; it will then close in on the road and take its place in the column.

The field trains will assemble at 7.30 A. M. east of New Oxford.

I will be with the reserve of the advance guard.

When the advance guard is fired on, west of 596, the support takes up the double time until over the ridge, the colonel commanding has the reserve form line of columns at increased intervals behind the ridge 609 and then move at double time until well down its western slope.

General B orders the main body to halt, head where farm road branches off to the southeast, except 3d Battalion, 1st Infantry, which is to continue the march. He himself hurries forward with the advance guard to ridge 612 and finds that the terrain agrees with his map and that the advance troops on ridge 612 are drawing hostile artillery fire and the scouts in advance, hostile infantry fire. Reports by the scouts and the cavalry confirm the report of the posi-

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tion occupied by the enemy. General B issues the following orders:

To Colonel, 1st Infantry, whose leading battalion is partly deployed near 607:

> Colonel, we shall attack at once, the 2d Infantry will come in on your right, the 3d Infantry will be in reserve in rear of the 2d Infantry. The artillery regiment will go into action near Cedar Ridge.
>
> Deploy the remaining two of your battalions with your left at that farm house south of 614; as soon as the head of the 2d Infantry approaches 607 assemble your 1st Battalion as regimental reserve. Do not advance beyond this ridge until I give the order. When you advance direct your left on cross-roads 601—Gallagher line.
>
> New Oxford is the collecting point for the slightly wounded. The rendezvous for emptied ammunition wagons is near farm house east of 609 ridge.
>
> After the advance starts I will be at that orchard (612).

General B then rides rapidly back to his main body and gives the following order to the three colonels:

> The enemy is in position as stated in previous march order.
>
> We will deploy for attack at once.
>
> The 1st Field Artillery will proceed to near Cedar Ridge and take up position to support the attack.
>
> The 1st Infantry has deployed south of roadfork 607.
>
> The 2d Infantry will advance to near roadfork 607 and deploy with left at the orchard north of the roadfork and advance to the attack when ordered by me.

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The 3d Infantry will constitute the reserve and will take station at first about 300 yards northeast of orchard at 612.

New Oxford will be the collecting point for the slightly wounded.

This place will be the rendezvous of emptied battalion ammunition wagons.

I will be at orchard near 612.

As soon as informed by General A that 2d Brigade is in position and ready to attack, he signals his two colonels to begin the advance.

2 d R e q u i r e m e n t , Orders of Colonel K, 1st Infantry:

Colonel K on receiving his first order from the brigade commander immediately rejoins his regiment and assembling his staff and the commanders of the three battalions, the machine gun platoon, and mounted scouts, issues the following order:

The enemy, about one division strong, about one-third regulars, the rest new troops, has taken up a position on ridge 611—613—627. This division will advance in two columns and attack.

The left column, the 2d Brigade and 2d Field Artillery, will advance on Square Corner and envelop the enemy's right, the 3d Brigade and Engineer Battalion will constitute the reserve.

The cavalry will send strong patrols to our right with its main force on the left.

The right column will consist of our brigade and the 1st Field Artillery, and will advance by Kohler S. H.—Brush Run S. H.

The 1st and 2d Battalions of this regiment will constitute the advance guard on the march. The 3d Battalion will form the leading element of the main body and follow the advance guard at 600 yards.

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Lieutenant B, send a patrol of three men to keep up communication with the left column during the march, have 8 scouts report to Major N, commanding the support, and with the remainder push ahead and try to locate the enemy's position.

Major N, your battalion (1st), the machine gun platoon and scouts, will constitute the support and will start at 6 A. M. from Diehl's Mill. March by the Kohler S. H. and Brush Run S. H. road.

The 2d Battalion will constitute the reserve and will follow the support at 600 yards.

The field trains will be assembled east of New Oxford at 7.30 A. M.

I will be at the head of the reserve.

When the support is fired on as it is crossing hill 609 the support commander commands, "Double Time, March," and continues at the double time until he reaches the lower ground, when he resumes his march as before.

As the reserve approaches 596, Colonel B directs the major, "Form line of columns and then increase gait and cross the ridge and resume the march."

The colonel and his staff then ride forward at a gallop to the support and push ahead to hill 612.

He here directs the support commander to deploy one of his companies and push it forward a short distance. This move drawing fire of artillery he halts it. His scouts farther in front have in the meantime drawn infantry fire. The flank patrols have verified the enemy's position.

The 2d and 3d Battalions of his regiment having arrived near the position, on the receipt of General B's order, Colonel K assembles his battalion commanders and machine gun platoon commander and issues the following verbal order:

The 2d Brigade and 2d Field Artillery are to attack from Square Corner enveloping the enemy's right. This column is to attack along this road, this

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regiment on the left, the 2d on the right, the 3d in reserve. The artillery at Cedar Ridge.

The 2d Battalion will deploy on a front of about 300 yards, its left at that farm house (pointing), and when it advances will move astride the 614—616 road.

The 3d Battalion will deploy with its right opposite that bend in the road (pointing to bend north of 614), and advance against the north end of hill 627 and the col connecting it with the hill to its northwest.

The machine gun platoon will take station about 200 yards south of the left of the 2d Battalion and, when the line advances, move forward into position to support the attack when well engaged.

As soon as the head of the 2d Infantry crosses the creek behind us the 1st Battalion will be asembled and moved a short distance east of 614 as regimental reserve.

The scouts will continue their reconnaissance on the flanks but will uncover the front.

The band will be reported to the senior medical officer. A regimental aid station will be established in the grove at 614.

New Oxford is the collecting point for the slightly wounded. The rendezvous for empty ammunition wagons is near farm house east of that ridge (609).

PART II

Required:

Orders of the three battalion commanders, 1st Infantry, Majors X, Y, Z.

Solution, 1st Battalion, Major X:

On receipt of his march order from the colonel he rejoins his battalion and assembling his officers issues the following verbal order:

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The enemy has taken up a position on a ridge about 4 miles to our west. His strength is about a division, although only about one-third are regulars, the rest are new troops.

This division will advance in two columns and later attack. The 2d Brigade and 2d Field Artillery constitute the left column and will advance to Square Corner and in the attack envelop the enemy's right. The 3d Brigade will constitute the reserve. Strong cavalry patrols will be on our right, the balance of the cavalry is near Whitehall.

This brigade and 1st Field Artillery constitute the right column and will advance by the Kohler S. H. —Brush Run S. H. road and later attack in conjunction with the left column.

This regiment, less 3d Battalion, constitutes the advance guard of the right column.

This battalion, the machine guns and 8 scouts, form the support of the advance guard.

Captain A, your company (A) and the scouts will constitute the advance party. You will start from Diehl's Mill at 6 A. M. and march by Kohler S. H. —Brush Run S. H. road; reconnoiter to your right— the connection with our left column has been provided for.

The remainder of the battalion will follow at 400 yards in the following order: B, C, D, machine gun platoon.

Company A having crossed the 609 ridge when the other three were fired on the major simply orders double time until down the slope and then resumes his ordinary march.

When he reaches a point about 400 yards east of 607 he halts the support and directs Captain A to deploy his company and advance. In the meantime the scouts in front are drawing infantry fire.

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On the approach of the 2d Infantry he withdraws Company A behind the ridge and assembles his battalion, marches to the designated place, assembles his captains and says:

> This brigade is deploying to attack. The artillery will go into position near Cedar Ridge. The 2d Infantry north of this road, our regiment to the south, 3d Battalion on the right, 2d on the left, this battalion is regimental reserve.
>
> The collecting point for slightly wounded is New Oxford.
>
> The ammunition wagons will be brought close and be prepared to issue promptly extra ammunition.

2d Battalion, Major Y:

On receipt of the march order of the colonel he rejoins his battalion and, assembling his officers, issues the following verbal order:

> The enemy, about a division strong, but only about one-third regulars, the balance new troops, has taken up a position on a ridge about 4 miles from here.
>
> This division will advance against him in two columns. The 2d Brigade and 2d Field Artillery as left column will march on Square Corner and in the attack will envelop the enemy's right.
>
> This brigade and the 1st Field Artillery constitute the right column and will advance by Kohler S. H.—Brush Run S. H.
>
> The 3d Brigade constitutes the reserve and will follow the left column.
>
> The 1st Cavalry will move on Whitehall and cover the left, sending strong patrols toward Granite Hill.
>
> This regiment (less 3d Battalion) is the advance guard for the right column.

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> This battalion is the reserve of the advance guard and will follow the support at 600 yards.

When the artillery fire is opened he orders line of companies formed, E and F Companies on the right of the road, G and H Companies on the left, and orders them to cross the ridge in double time and *not* to preserve alignment. He directs one of his staff:

> About five minutes after the battalion crosses the ridge bring the combat train across on the road at as fast a gait as you can.

After the companies have reached the valley the battalion is halted and closed up near the orchard west of 552.

On receipt of the colonel's order to deploy he orders the extra ammunition issued and directs the battalion quartermaster to hold the wagons off the road until the brigade has cleared it, then to send them back to the farm house just east of ridge 609.

Major Y then marches his battalion to a point east of the farm house and advancing cautiously with his captains to a point from which the hostile position can be seen, points out the position, crossroads 601, and Gallagher, and then issues the following order:

> The right column will deploy at once. The artillery goes into position at Cedar Ridge, the infantry deploys on this ridge. The 2d Infantry north of that road, this regiment to the south. This battalion on the left of our regiment, the 3d on our right, the 1st will be in rear of us as regimental reserve.
>
> Companies E and F will form the firing line and will deploy on a front of about 300 yards, E company on the left with its left at that farm house.
>
> Each company in the firing line will push a patrol forward to watch the enemy but the line will not advance until I give the order.

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The advance will be with the left on line 601—Gallagher.

Companies G and H will be in support, for the present will remain closed where they now are.

Company G will send one squad to cover our left until the left column comes up and then to keep up the communication between the two attacks.

New Oxford is the collecting point for the slightly wounded.

3d Battalion, Major Z:

After receiving the march order he joins his battalion and, assembling his officers, issues the following order:

The enemy has taken up a position on ridge 611—613—627; his strength is about one division but only one-third are regulars, the rest new troops.

This division will advance on the enemy in two columns.

Left column, the 2d Brigade and 2d Field Artillery, on Square Corner. The 3d Brigade as reserve will follow the left column.

This brigade and the 1st Field Artillery will form the right column and advance at 6 A. M. by Kohler S. H.—Brush Run S. H.

Our regiment less this battalion forms the advance guard.

This battalion marches at the head of the main body, following the advance guard at 600 yards.

When directed to join his regiment, Major Z crosses the ridge in line of columns as had the 2d Battalion. On receipt of his order to deploy, he orders a staff officer to have the extra ammunition issued and, when the road to the rear is clear of troops, to send the ammunition wagons back to the farm house east of ridge 609.

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He then marches his battalion to the rear of his position in line and after pointing out the position to his captains issues the following order:

> This column will deploy as follows: The artillery at Cedar Ridge, the brigade on this ridge with 2d Infantry on the right, this one on the left, the 3d in reserve.
>
> Our regiment deploys with the left at that farm house, 2d Battalion on the left, this one on the right. Each battalion with a front of about 300 yards.
>
> Companies I and K will form the firing line, K on the right with its right at that bend in the road. Each company in firing line will send forward a patrol to observe the enemy but the line will not advance until ordered.
>
> Companies L and M will form the support and remain closed up where they are for the present.
>
> New Oxford is the collecting point for slightly wounded.
>
> Deploy.

PART III.

Required:

1. The orders of the colonel, 2d Infantry.
2. The orders of the major of his right battalion.

Solution, 1st Requirement:

The colonel, 2d Infantry, rejoins his regiment on receipt of the march order, directs his adjutant to instruct the regiment to be formed ready to start from Diehl's Mill at 6.40 A. M. He then issues the following order to the assembled majors, staff, and machine gun platoon commander:

> The enemy is reported in position on the 611—613—627 ridge about 4 miles from here. His strength

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estimated at about one division, but only about one-third of it regulars, the remainder new troops.

Our division will advance against him, starting at 6 A. M., in two columns. The left column, 2d Brigade and 2d Field Artillery, on Square Corner, followed by the 3d Brigade as reserve.

The right column consists of this brigade and the 1st Field Artillery, and will advance by Kohler S. H. —Brush Run S. H. and start from Diehl's Mill at 6 A. M.

The 1st Infantry, less one battalion, is advance guard. The main body follows at 600 yards in the following order: 1st Battalion, 1st Infantry, 1st Field Artillery (less combat train), 2d Infantry, 3d Infantry, artillery combat train.

This regiment will form as follows: mounted scouts, 1st Battalion, machine gun platoon, 2d Battalion, 3d Battalion.

I will be at the head of the column.

On receipt of the attack order of the brigade commander he orders the lieutenant in charge of the scouts:

> This brigade is deploying for attack, the 1st Infantry on the left, this regiment on the right, our left north of this road. We deploy behind the next ridge. Send the sergeant and four scouts by that farm road leading north to the end of the knoll, then across the ridge to the roadfork near the creek. I will follow them with the regiment. Take the remainder of the scouts, turn north at that road back there (the one to 532) and then west to near roadfork 573, and cover our right. Our cavalry is on our extreme left, but has sent strong patrols toward Granite Hill.

The colonel then marches his regiment north from 596 to the end of knoll, then west over ridge, then southwest to

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552, then follows road until head of column is nearly opposite fringe of trees.

With his majors and the commander of the machine gun platoon and staff, he advances until the position of the enemy can be seen and pointed out and then, falling back, he issues the following order:

> This column is deploying to attack. The 1st Field Artillery is going into position on our right near Cedar Ridge.
>
> The 1st Regiment is on our left with its left at that farm house. The 3d Regiment will be in reserve in our rear.
>
> This regiment will deploy with its left north of this orchard (612).
>
> The 1st Battalion on the left, will cover a front of about 300 yards and will advance later, directing its left through road fork 560 on the col between the middle and northwestern knoll of the hostile position.
>
> The 2d Battalion will deploy to the right of the 1st, occupying about the same front.
>
> Both battalions will deploy behind the ridge and advance to the attack when I so direct. The left of the line will be held back at first so as to change the direction of front of the line about 45 degrees.
>
> The 3d Battalion (and machine gun platoon) will constitute the regimental reserve and will take position in rear of the right flank; as the line advances it will move into the corner of the woods to our right front.
>
> The band will report to the senior medical officer, who will establish a dressing station at this farm house (612).
>
> New Oxford is the collecting point for the slightly wounded. Farm house east of ridge is rendezvous for empty ammunition wagons.

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I will be at the northwest corner of that orchard first, later I will join the reserve.

2d Requirement, Orders of Commander, 2d Battalion, 2d Infantry:

There will be no necessity for him to issue any order until he receives the order to deploy; he will then rejoin his battalion and issue the following order:

The enemy estimated at about a division in strength, but only about one-third of it regulars, the rest being new troops, occupies the ridge next to this.

This division is deploying to attack. The 2d Brigade and 2d Field Artillery have moved on Square Corner and will attack from there, enveloping the enemy's right.

The 3d Brigade will be the general reserve and is held in rear of the 2d Brigade. Our cavalry is on the other flank but has sent strong patrols toward Granite Hill.

This brigade is deploying along this ridge, the 1st Infantry on the right south of this main road, this regiment on the left with its left on this orchard, the 1st Battalion on the left, 3d Battalion in reserve.

This battalion will be the right of the line and its left will connect with the right of the 1st Battalion. Companies E and F will constitute the firing line, Company E on the left. Each company will occupy a front of about 150 yards.

As the firing line of the regiment advances the left will be held back and the right advanced so as to change direction about one half left.

This battalion will be careful to gain sufficient distance to the west to avoid crowding in on the 1st Battalion.

Your objective is that little wood on the enemy's left.

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Companies G and H will constitute the battalion support.

Company G will send one platoon under an officer by 550—R. F. Weaver to 572 as flank patrol. The platoon will start at once. A mounted orderly will accompany it.

The line will not advance from here until I give the word.

New Oxford is the collecting point for slightly wounded.

Issue the extra ammunition and send empty wagons back to farm house east of 609 ridge.

Deploy.

PART IV.

Required:

1. Statement of how Lieutenant O, commanding the scouts, 2d Infantry, conducts his detachment and the instructions he gives the patrols sent out.

2. Statement of how Lieutenant P, commanding 1st Platoon, Company G, 2d Infantry, conducts his platoon and any orders he gives.

Solution, 1st Requirement:

Lieutenant O, on receipt of his order, joins his command and directs the sergeant:

> The enemy is in position on the second ridge beyond this. Our division is deploying to attack, our brigade is on the right, this regiment the right of the brigade and will advance around that knoll. You will take the first four men in ranks and precede the regiment as advance party. Move up that country road to that clump of trees ahead about 200 yards, then around the knoll and follow the general direction of the main

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road. Trot out as soon as uncovered by the artillery. Reconnoiter to your right, the left is all right.

Lieutenant O then leads his men off the main road and says to them:

The enemy is in position on the second ridge beyond that one, about three miles from here.

Our division is deploying to attack, our brigade on the right, our regiment, right of brigade. We are to move north, then west and cover the right flank.

Strong cavalry patrols of our division have been sent toward Granite Hill.

Corporal D, take the first two men and trot ahead as advance party, follow that road to the cross road about half a mile from here, there take left hand road until you reach the turnpike, then turn west to the first road leading south, follow that to the first cross road and then halt.

Lieutenant O follows Corporal D at a walk until at a distance of 400 yards, then takes up the trot. On arriving at the roadfork 519 he halts and detailing 3 men as a standing patrol orders:

The next detachment will proceed down this road to the next crossroads; you will remain here and observe this turnpike and the country about here. J, you will be in charge.

On arriving at 573 he sends out a patrol of two men to roadfork 567 and another to 582; a double sentinel is detailed at the detachment to watch the roads. He then dismounts the rest of the men under cover from view from the north and west, making use of nearby buildings, but carefully avoiding entering an inclosure that would hamper his prompt departure. Horses are not unsaddled or unbridled or even tied.

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2d Requirement:

Lieutenant P, on receipt of his order, detaches his platoon from the column and issues the following:

> The enemy is in position on that next ridge about a mile from here, our division is preparing to attack, our brigade on the right, our battalion the right of the brigade. The 1st Field Artillery is to go in over there (pointing to Cedar Ridge). Our cavalry is on the other flank but has strong patrols toward Granite Hill.
>
> This platoon will constitute the right flank combat patrol and will advance to a cross road about a mile and a half west of here. We will move under cover as far as practicable to that roadfork there (pointing to 550), then follow that road to the west and turn south again at the next road.
>
> Sergeant, take four men as advance party and move out. I will follow you at about 250 yards.

On reaching 582 Lieutenant P sends a patrol of two men to hill 593 to observe, another across the ravine toward Salem Church, two men are left at the Weaver roadfork. He then moves into the woods a little southeast of the farm house and sends a patrol of two men to near 572 and another to where the farm road crosses the nose.

The remainder of his platoon will be held under cover from view from the enemy's position, but in a state of readiness.

When the right of our firing line crosses the 560—572 road, Lieutenant P will move his platoon to near 572, call in all his patrols except the one at 593 and will send out three others, one to 562 and one to 574 and one to the woods south of his new station.

Arrangements where practicable should be made for flag signals from such a detachment to the support or reserve. In this particular case it does not seem to promise much good and is omitted.

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PART IV

CONDUCT OF A DIVISION

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SMALL ARMS AMMUNITION SUPPLY*

IN all armies the ammunition supply may be divided into three echelons:

1st. What the man has on his person or what is immediately available as being in company or battalion small arms ammunition carts.

2d. Ammunition in division or corps trains.

3d. All behind the 1st and 2d echelons whether in moving trains or in convenient depots or both.

The 1st is the one particularly considered in this paper.

The division and corps trains will seldom be available except to replenish the ammunition after a fight; the 3d echelon is so far back that it cannot usually be made available on the day of a battle and hence it does not enter into the problem of supplying the firing line.

Cartridges Necessary per Rifle

In determining the regulations that shall govern our army in the matter of ammunition supply for the infantry firing line, we should know: how many cartridges should be immediately available for each rifle; how this number can best be divided between the individual man and the company or battalion transport, and what kind of transport should be used.

This paper will be merely a compilation of facts bearing on these points, together with a few deductions I have drawn from them, and proposed regulations for our service that I believe to be suited to our needs.

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*Lecture to the Army School of the Line in 1907. Some corrections have been made in table of amounts of ammunition carried in our own and foreign armies. A part of the suggestions herein made are now contained in our regulations.

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How many cartridges are necessary per rifle for a day's fighting?

To determine this let us see what experience has shown.

In studying this phase of the question it is necessary only to go back to the Franco-German war of 1870–71, the first in which both parties were armed with the breech loader. What is said here as to expenditures in this war is condensed from Modern European Tactics—Balck.

In this war the German infantrymen carried 80 rounds per man, and 20 were carried in the battalion train.

If we look at the total expenditure of ammunition during a campaign, it would seem as if there never could have been a deficiency of ammunition. In the Franco-German war the expenditure of ammunition in the Ist Bavarian Army Corps was 166 rounds per rifle; in the IId Bavarian Army Corps it was 44 per rifle; and in the Saxon Army Corps 58 per rifle. These may be taken as representative for this army in this war.

German Expenditure in 1870

Necessarily, proper conclusions as to the number of cartridges that must be provided for each infantryman cannot be drawn from the average number fired by any large body of troops, part of which, as reserves, fire none at all or very few compared with those in the first line.

On the 16th August at the battle of Vionville, the IIId Prussian Army Corps fired only 34.5 rounds per rifle, in spite of which ammunition ran short in places. By taking cartridges from the dead and wounded during a pause in the fighting at noon, the 35th Regiment supplied each man with about 200 rounds which were nearly all fired away in the course of the afternoon, so that by evening the ammunition again ran out.

Vionville

One of the most obstinate defensive actions in this war was the defense of the stone wall of Buzanval by the 50th Regiment. The enemy was greatly superior in numbers at this point, and the quality of his troops was good. The fighting lasted 9 hours. Lieutenant General von Boguslawski says: "It is impossible to say with cer-

Buzanval

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tainty how much ammunition was expended on this occasion. The 2d Battalion recorded that it fired 14,206 rounds, nearly all of which was expended by the 6th and 8th companies, as the 5th company did not fire a round and the 7th very few, the 12th company fired an average of 92 rounds or a little more than 10 rounds per man per hour."

Beaune-la-Rolande

At Beaune-la-Rolande some companies of the 56th Regiment were in action at Romainville and fired from 80 to 100 rounds each. The 1st Battalion, 57th Regiment, fired slightly over 80, while the 38th Brigade received no ammunition in addition to the 80 in the belts, which had to do for the entire battle; but, as the French did not simultaneously assault the whole front of Beaune, there were pauses in the fighting during which it was possible to pass ammunition along the line to the most threatened points. Here and there in this brigade the expenditure of ammunition amounted to 200 rounds per man while at other points only 40 rounds and even less were fired—still it is a fact that all requirements were met with the ammunition in the pouches, 80 rounds per man.

Champigny Orleans

The Württemburg Brigade (5 battalions) fired an average of 40 rounds per man at Champigny, November 30, and the same amount on December 2d. At the battle of Orleans the 2 battalions of the 1st Hessian Regiment fired only about 5 rounds per man while the 2d Bavarian Regiment fired from 50 to 60 rounds each.

At St. Privat the 2d Guard Regiment fired as follows: 1st Battalion, 27,340; 2d, 17,820.

On the French Side

The French always used far more ammunition. At Champigny each French infantryman had 118 rounds and yet they were not enough. In the French Army of the Rhine the total expenditure of ammunition during the period from the 6th to 31st August was 30 rounds per man, and in the battles of the 16th and 18th of August by corps it was from 13 to 27 rounds

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per man. Coming to smaller forces the figures are much higher.

On the 16th of August Grenier's division which met the attack of the 38th Brigade is said to have fired 150 rounds per man.

In this war the French were generally on the defensive and had a longer range rifle which would account for their firing more shots and, as the Germans could not indulge in long range fire, owing to their rifle, their expenditure was reduced.

Russo-Turkish War

In the Russo-Turkish War both sides had longer range rifles than in the previous one. The Turk on the defensive, as before, had the longer range gun. For the entire war the Russian expenditure amounted to 33 rounds per rifle and carbine. Coming to smaller units:

The Sofia regiment on the 23 of August fired 94 rounds per rifle.

On the 20th of July in the attack on Plevna the troops on the firing line in 6 hours expended 115 rounds each (all they had), and on the 30th of July 60 rounds in 4 hours.

In the assault on Chernovo the XIth Rifle Bn. fired in four hours 120 rounds per man. The XIIIth Rifle Bn. at Shipka Pass, 122 rounds per man.

On the Turkish side battalions fired from 100 to 263 rounds per man in one day.

Civil War in Chili

During the Civil War in Chili (1891) the Congress troops who were armed with repeating rifles used such an enormous amount of ammunition that the supply contained in their pouches, 180 to 200 per man, was often almost used up in 35 to 40 minutes.

At La Placilla 120 rounds per rifle were fired in the course of 4 hours fighting and at Conlon 160 to 200.

As regards the Spanish-American War no data are at

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hand as to the Spanish expenditure of ammunition. On our own side the official reports do not give the amount expended on July 1st by organizations; but the following facts were collected:

Spanish-American War

Cavalry division. The men went into action with 100 rounds per man and drew no more ammunition until night when they still had ammunition in their belts.

1st Brigade, 1st Division. The expenditure of ammunition was very moderate not exceeding 50 rounds per man in any company and in many much less.

2d Brigade, 1st Division. Averaged about 65 rounds. Certainly did not exceed 100 rounds per man in any organization for they had no more until night.

3d Brigade, 1st Division. About 20 rounds per man.

2d Brigade, 2d Division. In the two regiments engaged, the men, after the fight was over, had about 50 rounds each but this includes ammunition taken from the killed and wounded. A few of the men had fired all their cartridges; but they were exceptions.

3d Brigade, 2d Division. The 7th Infantry expended more than either of the other two regiments, and it had from 10 to 15 rounds per man left at the close of the fight.

General Bates' independent brigade. The expenditure was very small, about 10 or 15 rounds per man on the firing line, and the reserve companies none at all.

These reports cover all infantry troops, and those acting as such, present this day, except the 1st Brigade, 2d Division. Its expenditure was undoubtedly about the same as in the 3d Brigade, 2d Division.

These troops were nearly all regulars, disciplined and trained.

In the China Relief Expedition, Captain Brewster reports: "The 9th Infantry at the battle of Tientsin was in action about 13 hours. The men went into action with 160 rounds per man and had only about 10 rounds left at the end of the fight.

China Relief Expedition

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"Considerable ammunition was undoubtedly lost by the men in their advance. The ammunition of the killed and wounded was collected and distributed to the other men."

In the Boer War the British infantryman carried on his person 100 rounds; in battalion small arms ammunition carts, 85 rounds per rifle.

War in South Africa

Comparatively little accurate information is at hand regarding the expenditure of ammunition in this war. From the report of the Royal Commission on the War in South Africa we find that there were approximately 66 million rounds of small arms ammunition expended during the war. This includes infantry, cavalry, and machine guns. If we accept this figure we have an expenditure of nearly 350 rounds per rifle and carbine. But from this same report we learn that they had 315 machine guns, which would account for a good many of those cartridges. A great many cartridges were lost owing to defective equipment. Lord Kitchener stated in his testimony before the Commission: "Our losses of ammunition in this campaign, which in itself proved a source of supply to the enemy, cannot be ascribed to a want of care of the individual soldier so much as to the peculiar unsuitability of the article supplied to him in which to carry his rounds."

The Boer leader also speaks of large quantities of ammunition picked up on the ground where British troops had camped or bivouacked, and of finding it along the line of march.

Making deductions for machine guns and losses, the number expended per rifle still remains large.

Colonel Mayne in the "Infantry Weapon and its Use in War" says: "No statistics have yet appeared as to the expenditure of rifle ammunition in the various battles in South Africa, but it must have been very considerable, because troops provided with 150 to 200 rounds each had in many cases used them all up before long, apparently without much injury to the enemy, and had to remain for hours on

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the ground—unable to do anything to assist the progress of the fight * * * experience alone brought its lesson of thrift in expending ammunition."

Earl Roberts also stated at Biesley in 1901: "In fact, the soldiers do not waste their ammunition under the excitement of battles as was expected they would do, for they rapidly found out that their own safety depended on their ammunition being most carefully husbanded."

On the Boer side we have still less data as to expenditure of small arms ammunition. From the German official account of this war we learn that the Boer stock of small arms ammunition may be assumed as 80 millions. How much of this was expended is not stated. They fired much; but figures as to battles are not available. The Boer soldier carried his cartridges in bandoliers containing 60 rounds each and went into action with two or more.

On the Boer Side

"At the battle of Atbara in April, 1898, the British soldiers each carried 127 rounds which carried him through the fight and to spare." (Burleigh.)

Russo-Japanese War

In the Russo-Japanese War the Russian infantryman carried on his person 120 rounds, with 66 in the battalion train.

The Japanese infantryman carried on his person 150 rounds with 59 in the battalion train.

Of this war complete returns are not yet available, but some data have been obtained.

On the Japanese Side

At the battle of Nanshan we have in a report by General McArthur the following statement of the expenditure of ammunition which was given out officially by the Japanese authorities:

1st	Division,	667,010
3rd	"	425,148
4th	"	1,110,086

The following is from my own report:

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In the attack made from the right of the Japanese 2d Army on the early morning of August 31st, one of the battalions started in before daylight, was at short range and maintained a fierce fight all day. The firing line started in with 200 rounds per rifle and fought it out until dark without a fresh supply.

The 20th Infantry in the attack on the inner line at Liao Yang was continuously and very heavily in action September 2d and 3d and expended the following amounts of ammunition:

1st	Bn.,	109,964
2nd	"	52,000
3d	"	79,746

This would give an expenditure per rifle, if the battalions were full, of 125, 60 and 96, respectively.

In the attack on the village of Su-li-ho, in the advance on the Sha-ho, the men on the firing line expended only a few shots over 100 rounds per man; the reserve none.

On the Russian side we have but little data.

On the Russian Side

It is well known that their expenditure was great. Colonel Macomb reports that the 34th East Siberian Rifles at Liao Yang in 3 nights and 2 days expended 1,200,000 rounds. August 31st the 122d Infantry Regiment expended 308,000 and the 123d, 450,608 rounds.

I was over much of the Russian position at Liao Yang a few hours after it was captured. Everywhere in the position were many cartridges. In places there were piles of boxes still unopened. Possibly a part of the enormous expenditure by the 34th Siberian Rifles is thus accounted for.

Captain Judson reports: "Total ammunition issued 35th Division 17th Corps, consisting of the 137–138–139–140 Regiments of Infantry, from their arrival in Manchuria, Feb. 20th to Dec. 31st 1904, was 3,146,750, an average per regiment of 786,687."

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Again extensive deductions should be made for ammunition lost and abandoned to the enemy.

Balck's Summary

Captain Balck thus (1899) summarizes his views as to the necessary number of cartridges for a battle: "We should not, of course, imitate the frequently foolish way in which the Chileans and Turks fired enormous quantities of ammunition at extreme ranges, although it occasionally produced some effect. This procedure on their part was due solely to defective musketry training, absence of all fire control, and want of discipline.

"The instances that have been cited show that as a rule 100 to 150 rounds per rifle are sufficient for a general action. Cases may occur, however, when it would be an advantage to have more, and this must be provided for in fixing the amount of ammunition, both that carried by the soldier and that carried in the small arms ammunition carts provided for infantry in the field. It must also be borne in mind that it is only when each army corps has a separate road to march on that it will be possible to replenish the ammunition from the ammunition columns after a battle. If, however, it is not practicable to allot a separate road to each army corps, it will be next door to impossible to replenish the ammunition except after the lapse of some time."

Although the above was written before the war in Manchuria it still holds. We have seen that the better the troops, generally speaking, the less the expenditure. The amount expended by an army as a whole is not excessive. It is the local expenditure that we must always be ready for, and, with fairly good troops, from 200 to 250 rounds will supply the needs for any day.

In Other Armies

Let us now glance at the arrangements in other armies for solving this problem.

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1st. Distribution:

*	1st Echelon.			Second Echelon.	Total 1st & 2d Echelons.
	On the man.	Bn. or Co. Carts.	Total.		
Austria	120	47.2	167.2	75	242
England	115	250	365	125	490
France	120	82	202	110	312
Germany	150	77	227	144	361
Italy	162	24	186	85	271
Japan	120	80	200	.....	.....
Russia	120	66	186	245	431
U. S.	100	120	220	120	340

2d. How the ammunition in the 1st echelon, not carried on the man, is transported:

Austria—In a cart similar in form to an artillery caisson, drawn by 2 horses. Capacity 9,450 cartridges.

England—At present in a two-wheeled cart drawn by 2 horses. Capacity 17,600. In addition each battalion has 2 pack animals.

Japan—18 pack ponies to a battalion.

Germany—Four-wheeled, four-horse wagon of special construction.

France—Two-wheeled cart drawn by 2 horses—horses either abreast or tandem. Capacity 16,384.

Russia—Two-wheeled carts of which ⅔ are one-horse, ⅓, two-horse. Capacity 6,000 and 14,400, respectively.

Switzerland—Two-horse, four-wheeled carriage. In general pattern it is like our caisson. Capacity 17,280.

*This table was corrected as far as data was obtainable in 1913.

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Spain—Two-wheeled cart drawn by 2 mules. Capacity 15,000.

Turkey—Pack animals only.

Regulations in Other Armies

To review the regulations of all foreign armies on this subject is impracticable for lack of space. A few points, however, will be noticed:

All contemplate the distribution of all ammunition in the first echelon before deployment.

In all, when near the enemy, the battalion and company carts are kept with their organizations, and in some are never separated.

Their other regulations are dependent on their general systems of supply and organization; as ours must be based on those of our own army.

After compiling all the information I could collect on this subject and studying it carefully it appeared to me that, from the data available, the following deductions might be drawn:

Deductions

Present Day Requirements

It may be assumed that every man on the firing line should have with him, or be furnished during the action, ample cartridges to see the fight through, and to be able, whenever it will be effective, to fire upon the enemy; yet to have too many cartridges carried by the man unnecessarily increases his load and thus reduces his mobility.

With battles lasting from two to four days it is not absolutely necessary that the men carry enough into action to last through. It should be possible to resupply the line at night. To resupply during the day is often impossible and always difficult.

It would therefore appear that every man who goes on the firing line should have with him enough cartridges to

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see the fight to an end or to last until darkness gives opportunity to replenish his stock.

This number will vary with many conditions. To win you must produce a certain moral as well as physical effect on your enemy; in other words you must produce in his force a loss sufficient to cause him to abandon the fight before you yourself meet the loss beyond which your men will not continue to fight.

Effect of Discipline

Troops well disciplined and well instructed in the use of their rifles will use many less cartridges than raw half trained troops to produce the same number of casualties. The kind of troops you are opposed to will affect the number materially; some require much more "killing" than others to satisfy them. The better the enemy shoots the more your men's aim will be affected, hence the more shots necessary to a hit. Increase of the range at which fire is opened increases consumption of cartridges as the percentage of hits will be less the longer the range. The kind of target offered varies the number of rounds necessary to get the requisite number of hits.

Improvements in the Rifle

Improvements in the rifle affect the number of cartridges required. This does not depend, however, on its rapidity so much as on other points. In the war of 1866 the Austrians used a muzzle loader whose rapidity of fire was three shots per minute, the Germans used a breech loader whose rapidity was 15 shots per minute, yet the Austrians fired more shots per rifle engaged than the Germans. But it was the hits that counted.

In the Thirty Years War it is reported that it took about 2000 shots to disable a man. "During the battle of Leipzig, which lasted two days, the allies fired twelve million cartridges and disabled 45,000 French which represents the expenditure of 266 rounds per man disabled."

As our rifles are improved, become more accurate and reliable, a given effect can be produced with fewer shots. Unless men are braver and steadier under danger than for-

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merly the same loss will break our lines and cause retreat now as heretofore. The rapidity with which the loss is inflicted will sensibly reduce the amount of loss necessary to produce a required moral effect.

Colonel Mayne says: "A loss of 10% inflicted within a few minutes will probably stop and even drive back troops who would willingly endure a gradually inflicted 50% or greater loss spread over two or more hours of fighting."

For Our Own Troops

From the data we are justified in saying that, with troops reasonably good both as to discipline and musketry training, two hundred cartridges per man should be sufficient to see him through a day's fighting and ordinarily would be greatly in excess of the number fired; but the number available must be the maximum that may be required, provided it is not more than the man can carry. As General Rohne of the German Army states: "We can count with certainty only on the ammunition of the first line."

Will this number suffice for us? If we could have only troops like the regulars in 1898 it would be ample and to spare. With troops, such as we are likely to have at the commencement of a big war, men with little discipline and musketry training, it will be none too great, if it is even large enough. But, as in South Africa, "experience will bring its lesson of thrift in expending ammunition," and our men learn fast. The minimum available should be fixed at about two hundred and in the earlier stages of the war made greater if practicable.

On the Defensive

On the defensive in a prepared position the expenditure will be much heavier than on the offensive. Ammunition can be easily provided and should be in the position in great abundance. The fact that you are on the defensive generally presupposes inferiority in numbers or training; but there is no question of ability to get cartridges and every cartridge should be fired that offers

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even a fair chance of finding an enemy, in the hopes of bringing him to an equality or lower before he reaches the position.

Distribution of First Line Ammunition

Of the ammunition that should be available at the outset of a fight we find that in no country is it habitually all carried on the man. The first echelon is divided into two parts, one on the man the other in battalion or company carts. This division varies greatly in different countries, from Italy with 162 on the man and 24 in the carts to England with 115 on the man and 250 in the transport.

Our regulations call for 100 rounds to be carried by the man. The remainder of the ammunition in this echelon is put up in bandoliers, each holding 60 rounds, packed 20 in a box. By assigning two four-horse wagons to a battalion we can carry 2 bandoliers per man giving us 220 rounds in the first echelon, 100 on the man, 120 in the battalion wagons. There can be no objection to this division except that of having two wagons, and these we must have or add one of the bandoliers (4½ lbs.) to the man's constant load. It is believed that the wagons are cheaper. Outside of our little regular army, in a big war, our troops will be made up of men little hardened to their work; the additional load of 4½ lbs. means that many more men will break down, and it is believed that with the increased load they will march enough more slowly and straggle enough to more than make up the difference in the length of the column.

If we lose nothing in length of column the only drawback is cost—and in this country the mules are cheaper than the men; and, in war, at first, money is about the only useful thing that we shall have in abundance.

Ammunition Wagons

The only wagon or cart we have at present for transport of ammunition is the escort wagon. With the exception of Germany no other country uses a four-horse wagon. Japan uses pack ponies exclusively. England two-horse two-wheeled carts and pack horses; Russia two-horse and one-horse carts, two-thirds

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of the carts being of the latter. All the other countries use two-horse vehicles, generally two-wheeled carts.

The advantages of pack animals are many, the principal ones being that they can go where wheels cannot and that when it is necessary to take them under fire, they offer a smaller target. But their disadvantages are also great; unless they are led they take up much room on the road and too many animals have to be foraged for the load carried. The advantages claimed for the two-wheeled cart are that it can be taken over ground impossible for a four-wheeler and carries as much load per animal as the latter.

The best vehicle is undoubtedly a wagon built on the pattern of the artillery caisson. In every deployment of an army there will be parts of the line which, owing to the nature of the ground, cannot be reached by a four-wheeled wagon and some which cannot be reached by any transport but packs. With a wagon of the caisson pattern, provided with a pack outfit for the leaders, we have the advantages of all the systems. We have the four-horse four-wheeled wagon where it can be used, the cheapest one as to men, horses and space on the road. By taking the leaders off and unlimbering we have with the wheelers the very best of carts and the leaders can be used to pack. They should be provided with a special pack saddle however. We cannot in war time train all our infantry to pack on an aparejo; we must have something anyone can use; besides, the aparejo is unnecessarily heavy to be carried along for this purpose. Until we get the caisson the pack outfit should be provided for the leaders on the escort wagons, that we may have something available more mobile than a four-horse wagon.

Place in Column

As to the place of these wagons on the march, the concensus of opinion in all leading armies is that they should not be separated from their battalion. It is not deemed possible to collect them by regiment or brigade and promptly issue the ammunition when needed. Even from battalion carts it cannot always be

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distributed. As a result of experiments conducted in Germany it was found to be practicable on the defense, and on the deliberate offense; but in the rencontre fight the first companies, which had to deploy directly from column, often lacked opportunity to distribute the contents of the wagon among the men. If the wagons were back of the brigade or even of the regiment it would be still more difficult and still more companies would go into action without the extra ammunition.

Wagons in the division trains could hardly get to the front during the deployment, nor for sometime thereafter

Refilling

The company or battalion cart having been emptied should not go back to the ammunition column for a resupply; but wagons should be sent forward from the column to resupply the battalion wagons. This certainly seems to be the rational course. At the commencement of an action, particularly if the deployment takes place from column, there is a movement forward, and wagons going back from the leading brigade to the division trains would not only have a hard time but would probably be considerable of a nuisance to others. The division wagons coming forward would be with the current and would move with much less difficulty and much more rapidity, and the time required for the battalion wagons to be refilled and get back to the vicinity of their battalions would be much less than half of what it would be if the battalion wagons were to go to the division train.

Ammunition of Dead and Wounded

The regulations of most countries contain a clause directing the collection of the ammunition on the dead and wounded and its distribution among others. There are writers who claim that this cannot be done on the offensive and that these regulations are a mistake; others maintain that a special detail should follow the lines and do this collecting to prevent delay in the firing line. It would seem to be asking a good deal of a man to follow the firing line and gather up

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this ammunition and distribute it along the line. In other words, to expose himself to many times more risk than the firing line without the opportunity of "shooting up his courage" that the firing line has. Still there will be in a battle, and on the offensive, many opportunities to get ammunition from the dead and wounded. The line is not continually moving and, when stationary, the wounded in that position can often pass what they have to their neighbors; and others can get ammunition from those killed and wounded nearby. Every proper effort should be made to make use of this ammunition; though that all, or even approximately all of it can be made available is not believed; still much of it can be.

Ammunition Reserve

Colonel Mayne recommends the retaining of say 30 rounds as a reserve to be fired only by direction of an officer. This is believed to be a wise and practicable regulation. The idea that a firing line is going forward in attack and, upon being checked, is going back to the starting point, unless literally driven back, is not good tactics. If it can it must get cover and hold the ground gained and wait for darkness or reinforcements; it must be prepared to check a counter-attack, and, since there is always danger of many men recklessly shooting away their ammunition, this reserve may be of vital importance when the counter-attack is made or in case the enemy offers a fine opening for pushing the attack. Captain Matsui, commanding a battalion of the Japanese Army, in his attack on "Scrub-hill," August 31st, found himself in just such a situation, and ordered 50 rounds held as reserve to be fired only by his order.

Distribution along the Line

All parts of a line are seldom called upon to fire an equal amount of ammunition. Captain Balck and Colonel Mayne are agreed that with disciplined troops the passing of ammunition along the line to points where it is most needed is not very difficult.

In spite of all precautions portions of the line may run

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out of ammunition and have to be resupplied. Two methods laid down in many of the regulations are generally, though not always, practicable.

The first is to give extra ammunition to the supports as they are sent forward into the firing line, this extra ammunition to be distributed as the supports reach the line. This is practicable whenever supports can be sent forward, and was used in the late war in Manchuria. The second is to send men forward with ammunition in bundles or any convenient way of carrying it. This also was used by the Japanese in Manchuria and is practicable whenever the first method is, that is, whenever men can cross the ground behind the firing line.

Resupplying the Firing Line

Both these methods have been embodied in the regulations of most European countries for years. Under cover of darkness or favoring terrain either may be a simple way of replenishing ammunition; but, under ordinary conditions, they will be difficult and sometimes almost impossible. The firing line must have ammunition. The troops should and generally will, if reasonably good troops and properly handled, take into action enough to last them through the fight or until darkness favors a resupply. But it may happen that they will run short for some reason and must be resupplied. The battalion wagon or part of its contents should be as near as practicable. If the line is to be reinforced, the reinforcements should take up the ammunition with them. This is the rational method, for they have to cross the fire swept zone anyway and the increase in weight will not be a great drawback for the comparatively short distance they have to go. Individual men should not as a rule be sent forward to carry the ammunition. If special men are to be sent for this purpose they should be sent in groups, each under a non-commissioned officer, and, having reached the firing line, they should stay there. Men who have reached a position near the enemy represent a gain which it has cost more or less blood to secure, and it certainly is not good policy

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to send men back over this zone at a cost equal to that of getting them up to the line when precisely there, is where the men are most valuable.

Use of Carriers

Of course, under cover of darkness, or in exceptionally favoring terrain, men may go back and forth between the nearest supply and the line with little danger; but under ordinary circumstances, even if men could be found to do it, it would border on the absurd to detail men to go back and forth between the firing line and the ammunition supply in rear. "At Modder River the English Guards remained lying down for 12 hours at 700 meters from the enemy, 29 ammunition carriers were killed trying to replenish their supply of ammunition."

We may assume that the method we have read of as being used in the Civil War, of marching a regiment to the rear to replenish its cartridge boxes, will hardly be used in future with long range and rapid fire rifles and improved artillery. Other schemes have been proposed but do not appear to the tacticians of Europe to promise to be of much value.

The best scheme is to have men fairly well disciplined and instructed in musketry. Then if they are given a reasonable supply of cartridges before entering into the fight they will generally have enough to last the fight through or until night gives opportunity for a resupply.

The Need for Regulations

The necessity for regulations governing ammunition supply in our army, and for their being as exact and detailed as practicable, will be apparent whenever we consider what our army will be at the outbreak of a great war. Regulations should be in such shape that officers who have given the subject little or no thought can readily learn them and carry them out.

These regulations should provide for the expenditure of this ammunition without two or three officers of each regiment having to pass invoices and receipts and to make returns. The ordnance officer of the division ammunition

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column should drop the ammunition on the informal receipt of the brigade officer superintending the resupplying of the battalions; but this latter officer should make no return. It may be assumed that what is not fired away will be turned in. He can have no object in carrying it around with him.

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Proposed Regulations for Ammunition Supply.

1. The Infantry Ammunition Supply will be classified as follows:

1st Echelon: the ammunition carried by the soldier and that in the battalion wagons.

2d Echelon: ammunition with division trains.

3rd Echelon: ammunition in general trains or in convenient depots in rear.

2. Each infantry soldier shall carry on his person 100 rounds. To each battalion shall be attached two four-horse ammunition wagons, each of which shall carry 25 boxes of 1,200 rounds each; this ammunition to be in bandoliers holding 60 each. In the division ammunition column 40 wagons carrying 30,000 rounds each.

This gives per rifle, allowing 500 to the battalion,

1st Echelon	on the man	100 rounds
	on the battalion wagons	120 rounds
	Total	220 rounds
2d Echelon		90
Total of 1st and 2d Echelons		310 rounds

3. Each battalion ammunition wagon shall be provided with two special pack saddles for carrying ammunition. When necessary the lead animals shall be taken out of harness and used as pack animals to carry ammunition to or near the firing line.

4. Each battalion commander shall be held strictly responsible that on the march each of his ammunition wagons has its full quota of ammunition and pack outfits,

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and that nothing else is carried on these wagons except forage for their own teams. These wagons will at all times be in charge of a non-commissioned officer.

Brigade and division commanders will make and cause to be made frequent inspections to see that this paragraph is strictly obeyed.

5. The battalion ammunition wagons will, on the march, follow immediately behind the battalion.

6. When an engagement is imminent the ammunition in the battalion wagons will be distributed, each man of the firing line receiving two bandoliers; or, at the discretion of the regimental or battalion commander, the men of the first line may receive three bandoliers each, the extra ammunition being obtained from battalions or companies to be in reserve; or, by direction of the brigade commander, from the regiment in reserve.

7. Each brigade commander as soon as part of his brigade deploys will designate a rendezvous for the empty battalion ammunition wagons of his brigade. This point should be as near by and as centrally located with reference to the brigade as practicable.

The brigade commander will also designate some officer, preferably a regimental or battalion staff officer, as being mounted, to take charge of the wagons and their resupply and will provide him with necessary messengers, part or all mounted if possible.

The rendezvous having been designated, the officer in charge will at once notify the commander of the infantry ammunition column of the division of its location and call on him for the necessary wagons of ammunition to refill such battalion wagons as have been emptied. This verbal requisition will be promptly honored. The officer in charge of the battalion ammunition wagons will sign an acknowledgment of the receipt of this ammunition but will render no return for it.

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8. A battalion wagon having been refilled will at once return to the vicinity of its own battalion, as close as cover or reasonable safety will allow.

9. All officers commanding the troops on the firing line will take advantage of every opportunity to replenish the supply of ammunition of the men on the firing line. All reinforcements fed into the line will take forward extra ammunition and distribute the same to those near them in the line. In case the battle lasts more than one day the firing line must be fully resupplied during the night.

10. Two hundred rounds should be sufficient to last through one day's engagement; but, if the ammunition carried by the men and that brought by supports prove insufficient, men will be sent forward from the battalion wagons, or other supply, with such ammunition as they can carry. These men in parties under a non-commissioned officer will work their way to the line as best they can. The ammunition delivered will be distributed by being passed or thrown along the line. These men will be taken from the troops in reserve but, having reached the firing line, will remain there during the engagement.

In no case will men go back from the firing line to bring forward ammunition, nor will battalion teams and drivers go back of the brigade rendezvous; the movement must be forward.

11. All officers should bear in mind that getting ammunition to the firing line in daylight, after it has reached a position within 800 yards of the enemy, is always difficult, and often impossible, and that to get out of ammunition within this range is most serious. They will therefore use every effort to prevent waste of ammunition, to collect and redistribute the ammunition of the killed and wounded, and take advantage of every opportunity to replenish the supply.

12. Thirty rounds of each man's ammunition will be considered as "reserve ammunition" and the men will

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be instructed that under no circumstances will any of this be fired except by direction of an officer.

13. Firing at extreme ranges on the offensive should always be avoided; it is seldom of much value. If, however, for any cause, it is determined to open such fire it will preferably be done by troops who are to remain in reserve, the troops of the first line afterwards passing them and taking up the advance. The reserve can much more easily be resupplied than the first line.

14. On the defensive, particularly if in a prepared position, abundant ammunition should be placed in the trenches or other works in advance, and the same economy should not be used as regards expenditure as on the offensive. Fire that offers fair prospects of producing casualties among the enemy should be used.

15. In each battalion, as soon as practicable after an engagement, the men should turn in all ammunition they have over the 100 rounds required to be carried. The remainder, if there be any, after the men who are deficient have been given enough to complete their quota, will be used to make complete bandoliers and be repacked in boxes. Battalion commanders will then at once complete the quota of their battalion ammunition wagons or, if they have an excess, turn it in to the ammunition column.

Brigade and division commanders will give attention to this matter and not only see that it is done but give such assistance as may be necessary by holding wagons from the ammunition column at brigade rendezvous to receive excess ammunition or to issue to those battalions that are short.

16. In case the troops are below a strength of 80 men per company one ammunition wagon may be taken from each battalion and the number in the division column can be reduced proportionately to any decrease in strength below that given in the Field Service Regulations.

17. The Ordnance Department will see that the 3d echelon is always supplied with sufficient ammunition to replace promptly any taken from the division column.

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Series A*—A Forced Retreat

PROBLEM I

In the Presence of Superior Forces

FORT LEAVENWORTH TWO-INCH MAP

Situation:

The Missouri River forms the boundary between hostile states: west, Blue; east, Red. Leavenworth is garrisoned by a Blue force consisting of the 16th Infantry, two battalions of newly raised volunteer infantry, one battalion heavy field artillery (2 batteries 4.7 rifles and one battery 6″ howitzers), and Troops A and B, 2d Cavalry.

Major General A, in command of the 1st Division, Blue Army, had moved east from Leavenworth into Missouri on a special mission and on May 1st was returning by Platte City. On the afternoon of this day the division, after a hard march, went into camp as follows:

1st Brigade and 10th Cavalry north of the 13—15—17 road with outposts on the line E—49—21 to east of 9—7 road, crossing that road about 1200 yards north of 9; 2d Brigade northeast of Platte City; 3d Brigade about one mile south of Platte City; artillery brigade with 1st Regiment just north of A—B road and immediately east of town, 2d Regiment just across the road from the 1st; engineers close behind (to the east of) the 1st Artillery; signal company and ambulance companies close behind the 2d Field Artillery. The supply train and ammunition columns with the

*Army Staff College, 1909–10, Map Problems—1st Series, Nos. 1 to 6.

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bridge train and field hospitals extend from two to four miles to the east of Platte City, parked on both sides of the A—B road; the field trains are with their organizations.

Division headquarters is at the hotel in Platte City.

On going into camp General A had no knowledge of any force of the enemy being in the vicinity except a brigade of two regiments of cavalry operating from Weston.

At 2 A. M. on May 2 General A learns that two divisions of the red army are moving on Platte City from the north. These hostile divisions were moved part way by rail but marched most of yesterday. They are without cavalry other than the brigade at Weston. The leading of these two divisions camped the night of May 1/2 with outposts six miles north of Tracy on the Tracy — 7 road, reaching this camp about 6 P. M. The other division is about six miles farther north on the 41—43 road.

The garrison of Leavenworth is subject to General A's orders and is connected with him by telegraph.

Rock Island Bridge is unserviceable.

Required:

General A's orders.

Solution:

On receipt of the information as stated in the problem the division commander assembles his staff and orderly officers and the necessary orders are dispatched without delay.

As the first part of each message, the chief of staff probably gives the information of the enemy to all the officers assembled and adds that the following is by direction of the division commander.

By Captain F to Brigadier General B, commanding the 1st Brigade:

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Your brigade will take a position north and northwest of western end of farm road running west from 9, to meet the enemy, delay his advance and cover withdrawal of the trains.

The artillery brigade will support you by 5 A. M Your field train will proceed to Leavenworth by 15—D—E—12, tail of train must clear 15 by 3.45 A. M. to make room for that of the cavalry which follows. The A—15 and A—D roads must be clear of your troops and wagons by 4 A. M.

Confer with Colonel X, 10th Cavalry.

Orders will be issued at 4 A. M.

Also by Captain F to Colonel X, 10th Cavalry:

Start a vigorous reconnaissance at daylight and cover the left of the 1st Brigade.

Your field train will be formed with head at 15 at 3.45 A. M. and follow that of the 1st Brigade directly to Leavenworth.

Confer with General B, 1st Brigade.

Orders will be issued at 4 A. M.

By Captain G to Brigadier General E, commanding artillery brigade:

Your brigade will march at 3.45 A. M. to take position with one regiment about a mile north of 15, the other nearly a mile north of the bend in the road 1100 yards northwest of 13. 1st Brigade will be in position in your front.

Your field train will join that of the 3d Brigade on the 56—Platte City road and must be clear of the A—B road by 3.45 A. M.

The 1st Battalion Engineers will be ordered to report to you after crossing the river.

Orders will be issued at 4 A. M.

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By Lieutenant Y to Major O, commanding engineer battalion:

Your battalion will be ready to march at 4.30 A. M. and will follow immediately behind the artillery brigade.

Your field train will follow that of the 2d Brigade and be ready to start at 5.30 A. M. Wagons must keep clear of A—B road until the troops are past.

The bridge train will remain with the division trains.

Orders will be issued at 4 A. M.

By Captain G to Major Q, in charge of trains:

You will move with your trains at 3.45 A. M. by section road two miles west of Platte City—56—50 on Leavenworth.

Arrange your column as follows: one section artillery ammunition, one section small arms ammunition, bridge train, supply columns, field hospitals, remainder of ammunition columns.

On reaching 50 have the two sections ammunition in the lead turn north and, after clearing your road, halt and await orders.

The remainder of the ammunition columns will halt beside the road between 50 and Alexander and await further orders. The field hospitals will park off the road near 14, except their field train which will continue in the column.

On the march, as you overtake or are joined by the field trains of the troops, you will assume command of them.

Hasten your march until clear of the town of Leavenworth. Park on the military reservation.

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By Captain H to Brigadier General D, 3d Brigade:

Your brigade will march at 3.45 A. M. by 56—50—52 on 10.

Your field train will be joined by that of the artillery brigade and follow without distance as far as 50; from there the combined trains will move directly on Leavenworth.

Orders will be issued at 4 A. M.

By Captain K to Brigadier General C, 2d Brigade:

Your brigade will march at 4.50 A. M.

Your field train will be joined by that of the engineer battalion, signal company, ambulance companies, and division headquarters, and will move at 5.30 A. M., halting at 56 until division trains pass, then follow the latter.

Orders will be issued at 4 A. M.

By Lieutenant Z to Captain M, Signal Corps:

Your company will be ready to march at 4.35 A. M. and will follow the battalion of engineers as far as the southeast corner of Tracy.

Send your field train to join that of the 2d Brigade east of town at 5.30 A. M.

Orders will be issued at 4 A. M.

Verbally to the Chief Surgeon:

The four ambulance companies will be ready to march at 5.20 A. M. Their field trains will join that of the 2d Brigade at 5.30 A. M.

The field hospitals will march at 3.45 A. M. with the division trains and halt off road near 14.

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Telegram to commander Fort Leavenworth garrison:

A hostile force of two divisions is approaching from the north. Advance now about six miles away.

I shall fight a delaying action here if necessary to cover withdrawal of trains.

Send your cavalry to 16 and the 16th Infantry to 18, starting at 4 A. M. to cover trains crossing the flat.

Have Major Z, commanding battalion of heavy artillery, take position on water works hill to assist in withdrawal of this division. Major Z will also send an officer of his battalion to 14 for the purpose of fire direction. I will have a staff officer meet him. This officer's observation station will be connected with the telegraph line to Leavenworth. Arrange for connecting the batteries with the same line.

1st Division,
Platte City, Missouri,
2 May 09, 4 A. M.

Field Orders
No. —

1. Two divisions of the Red army are moving on Platte City from the north. One division went into camp last night with outposts six miles north of Tracy on the Tracy—7 road, the other camped six miles farther north on the 41—43 road. They have no other cavalry than the weak brigade that confronted us yesterday.

2. This division will go into position west of the Platte River to hold back the enemy until the trains can be withdrawn and then make an orderly retreat on Leavenworth.

3. The Cavalry, at daylight, will begin a vig-

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orous reconnaissance toward the enemy and is especially charged to look out for the left flank.

4. The Artillery Brigade will go into position as follows: one regiment about a mile north of 15, the other nearly a mile north of the bend in the road 1100 yards northwest of 13. Fire will be opened on the enemy at his first appearance in any strength, forcing him to an early deployment and delaying his advance to the utmost. A second position near 10 will be reconnoitered.

5. The 1st Brigade will take a position north of the western end of the farm road running west from 9. The brigade will be prepared to make a stubborn resistance to the enemy's advance until ordered to retire. The brigade will provide necessary protection for the artillery.

6. The 2d Brigade will march at 4.50 A. M. by B—D to E and close up off the road near E. This brigade will constitute the second line and will be prepared to resist any movement of the enemy in its direction and will if necessary cover withdrawal of the first line. Orders will be given for its withdrawal.

7. The 3d Brigade will march at 3.45 A. M. by 56—50—52 on 10. This brigade will constitute the third line, and will take position off the road near 10.

8. The Engineer Battalion will be ready to march at 4.30 A. M. and will follow immediately behind the artillery brigade to beyond Tracy. The battalion commander will then report to the artillery brigade commander for instructions and will prepare roads, improve crossings, etc., as directed, to facilitate the movement of the artillery.

9. The Signal Company will be ready to

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march at 4.35 A. M. and will follow the battalion of engineers as far as the southeast corner of Tracy. The tactical lines to be laid will be ordered later. A detachment will be detailed to proceed to 14 and connect, as directed by the staff officer it will find there, the heavy field artillery observing point with the existing line into Leavenworth.

10. The Ambulance Companies will march at 5.20 A. M. and park off the road near B.

The Field Hospitals will march at 3.45 A. M. with the division trains, halting off the road near 14, which place is also selected for collection of slightly wounded.

11. One section artillery ammunition and one section small arms ammunition will be on the road between 50 and 52 after 6 A. M. The remaining sections of the ammunition columns, after 7 A. M., will be on the road between Alexander and 50.

12. The trains will move as follows:

The supply trains, ammunition columns, bridge train and field hospitals will march at 3.45 A. M. by section line road two miles east of Platte City—56—54 to Leavenworth. En route the field hospitals and ammunition columns will be halted to await further orders as previously directed.

The field train of the 1st Brigade and Cavalry Regiment will march so as to clear 15 by 4 A. M. moving by D—E—12 to Leavenworth.

The field train of the 2d Brigade, engineer battalion, signal company, ambulance companies, and division headquarters, in this order, will move at 5.30 A. M. to 56 and there join and follow the division trains.

The baggage of the 3d Brigade and artillery

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brigade will move by 56—54 directly on Leavenworth, following without distance, as far as 50, the 3d Brigade.

Major Q, in charge of the division trains will assume charge of all trains that join his column and regulate the march.

Troops from the garrison of Fort Leavenworth will provide protection for the trains from 14 to the bridge.

13. The road fork at 14 will be the collecting point for the slightly wounded.

14. From 5 A. M. until the withdrawal of the first line messages should be sent to the small orchard between 13 and 15, later to 12.

A,
Major General.

Copies by Lieutenant A to the commanders, 1st Brigade, artillery brigade, 10th Cavalry.

Copies by Captain K to the commanders 2d Brigade, engineer battalion, signal company and chief surgeon.

Copies by Sergeant D to the commander 3d Brigade and Major Q.

Comments:

The solution offered is one that, it is believed, would answer the requirements of the situation; it is not the only one and may not be the best one.

The division commander, at 2 A. M., finds himself in a very uncomfortable position. It may be asked if it is reasonable to suppose that the enemy could get so close to him without his knowing it if he had properly executed his office. It is believed that it might occur. The general information in his possession was that there was no enemy in the vicinity except the cavalry. These hostile divisions were pushed

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forward by rail part way then marched until late in the afternoon and went into camp as described. The country was hostile, the enemy's cavalry double his own, and it is not strange if General A's reconnaissance was not very successful. In the majority of cases, however, the presence of these divisions would, or at least should, have been discovered earlier.

There is less excuse for the camping arrangements of General A. But after a hard day's march, believing that there was no enemy within miles of him except a weak cavalry brigade, his dispositions are not to be wondered at.

General A, on receipt of the information at 2 A. M., could promptly conclude that the enemy would attack him early in the morning and endeavor to prevent his withdrawal beyond the Missouri River. He does not believe the enemy will move until daylight, in which case his attack will not begin in force before 6 A. M., or later. General A does not desire a fight if he can safely withdraw without one, for the odds against him are too heavy and the prospective gains too small.

His first impulse then might be to sound the alarm, start at once, and move in all haste to Leavenworth. General A realizes, however, that this would not be wise; the command is too large and too congested. If he attempted it, confusion and disorder would result, bridges would be blocked in the hurry and darkness, and the chances are that time would be lost. Turning men and horses out in the chill morning without breakfast is a poor preliminary for what may be a day's fighting. The enemy may move earlier than he expects. It is safer to be prepared to put up a good fight than to take the chance of evading it altogether with the alternative of utter rout.

It should be assumed that the general and his chief of staff have thought how they could move under the circumstances given if it became necessary. The complete order could be prepared and sent out; but that would take con-

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siderable time. It is better to give the warning orders and then carefully prepare the complete order. The cooks can at once prepare a hasty breakfast and then have time to have the wagons loaded and ready to move at the designated hour.

By 4 o'clock it is light. Everything being ready, and all understanding what is expected of them, it is probable the last element will reach Leavenworth as soon as though a hurry order were issued, and, what is more to the point, will not be demoralized.

These preliminary orders will be sent verbally by officers. The chief of staff will give the necessary information of the enemy to all the officers, then to each the additional message he is to carry. The aide or orderly officer should make a note of the important points, such as hour of starting, route, etc., of the unit to which he is to carry the message.

On receipt of the news and when the staff is called, the necessary horses will be ordered saddled; this can be done while the messages are being prepared. The message to the 1st Brigade and the cavalry will of course be the first dispatched. Next will be sent those to the artillery and trains. The order in which the others are sent does not matter.

These messages having been dispatched, the chief of staff must then prepare his complete order.

The preparation and issue of this complete order will not be deemed necessary by all of you. Some will undoubtedly prefer making the first messages more complete and letting those suffice.

I believe that in this case it is better to get the first messages off as quickly as possible, in order to give the command more time to prepare properly for the day's work. The day's order should be carefully prepared to avoid errors and it is better if every commander knows, not only what he is to do, but what relation his part in it bears to the whole scheme.

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Under this order the baggage train of the 1st Brigade and cavalry should clear 12 by 5.40 A. M. The next to reach this point will be that of the 3d Brigade and artillery. The head of this train will reach 12 about 6 A. M. This will be followed closely from 56 by the division trains which will hardly clear 56 before 6.15 A. M. The head of the trains of the 2d Brigade and auxiliary troops will reach 56 about 6 A. M. and will have to wait a few minutes for the division trains to pass. The tail of the column will not clear 14 until about 8.30 A. M.

As to the protection of the trains, the 1st Brigade and cavalry cover the movement fairly well and before 5.30 A. M. there will be a brigade at E and one at 10. The troops from the garrison of Leavenworth should be in position long before the first wagon leaves 14.

The tactical dispositions after 6 A. M. seem satisfactory. The 1st Brigade and artillery are strong enough to force the deployment of the leading hostile division—an operation requiring considerable time. The brigade at E well covers the left flank and will prevent a turning movement by the enemy, and also will cover the withdrawal of the artillery and 1st Brigade and give time for the artillery to gain a second position if deemed necessary. It can also reinforce the 1st Brigade if required. The brigade at 10 will cover the final withdrawal from the high ground to the flat and act as rear guard. Its own withdrawal will be covered by the fire of the heavy batteries from Leavenworth.

To cross the flat from 14 to the bridge would be a serious operation with hostile artillery along the western edge of the high ground, but General A counts on the heavy guns to prevent this to a great extent. These heavy guns may also be of great assistance earlier. With their great range and heavy projectiles, the observing officer, well located and in telegraphic communication with the commander, can direct the fire sufficiently well to produce great moral effect even if the physical one is not so great.

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Up to 5.45 A. M. General A's left is weak and his reserves small. He has only one regiment of cavalry, the enemy two. But the artillery is more necessary than the 3d Brigade and must go first, and it appears as though the infantry could reach E no sooner. General A does not worry much about it, however; he does not expect the enemy to move before 4 A. M., or, which is more likely, before 5 A. M., and the hostile cavalry can do little before it is supported by its infantry and artillery.

The Combined Order:

In form it differs from the usual model for a defensive action or a march. It is a combination of the two. It must be apparent that in this instance, as will very often be the case, the model forms do not apply. Paragraphs 1 and 2, however, should conform and generally do.

Our cavalry is inferior to that of the enemy. We cannot hope to force a way through to the hostile main body; but patrols skillfully led may gain valuable information. At first our left is weak, while the right is in no danger. Later it may be necessary to shift the cavalry to the other flank.

The exact positions of the artillery and 1st Brigade are not fixed. It is assumed in map problems that subordinate commanders are competent. The general location is determined from the map by division headquarters. The carrying out of the *spirit* of the order is left to the brigade commanders.

General A cannot foresee exactly how he can best use his troops to hold back the enemy if the latter makes a vigorous attack, because so much will depend on the enemy's plan. The enemy may wait to bring both divisions into line before attacking or he may attack with the leading one only. He may be very prompt or slow; the fight in this position may last two or three hours; and there is a possibility of there being no fight at all.

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E, therefore, seems a good point to place the 2d Brigade. It can deploy to lengthen his first line, if necessary, to meet the hostile second division; it is favorably placed to strike a turning or enveloping movement against the 1st Brigade or to cover the withdrawal of the first line; or it can support that line if necessary.

General A intends to withdraw as soon as he can do so safely. He is not going to attempt a fight to a finish against double his strength. He cannot, therefore, put in his last reserve as he might do under other circumstances. He consequently holds the 3d Brigade to cover the withdrawal of his other two and then act as rear guard. He hopes to inflict more loss on the enemy than he himself suffers and then withdraw in good shape after his trains. If it comes to a question of losing his trains, or part of them, or so involving his command that it can only be withdrawn with very heavy loss, he will sacrifice the wagons—they are cheaper than men.

General A has ordered the artillery some distance off the road and the left regiment has rough broken country in its rear. Their withdrawal when the time comes must not be impeded by bad stream crossings, wire fences, etc. The left regiment will probably have to withdraw by 17 through E, the other by 15 to 52. The engineer battalion is therefore sent forward to prepare at once for this withdrawal and should be ready for it before the fighting becomes at all serious or close. By the time this work is completed the possible second position for the artillery should have been reconnoitered and any work necessary there would then be done. When the engineers are no longer needed for such work they will promptly be ordered to follow the trains.

The orders for laying the tactical lines by the signal company could not be given at the time the order was issued. If all goes well with the division until all the troops are in their designated positions General A will probably want a line to each brigade headquarters and to 14. It is by no means certain that the enemy will not interfere with General

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A's program; and where the lines will be laid, or whether or not any will be laid is uncertain at 4 A. M. General A therefore holds the company at a convenient point until he knows what is required.

As to the sanitary troops the arrangements seem satisfactory. Even with heavy fighting the ambulance companies have little to do in the early stages, and there is no hurry about getting them across the Platte except that the bridge is apt to be one of the targets sought for by the hostile artillery. In the kind of action to be fought, where we know in advance that we are going to abandon the field, we want such disposition made of the ambulance companies as will facilitate as much as possible carrying off our wounded; they are therefore pushed close to the front.

Under the conditions set forth above no field hospital is likely to be set up. All those men so seriously wounded that they cannot be moved to Leavenworth will be left in some farm house with the necessary attendants, under the Geneva Convention. The hospitals are therefore withdrawn to 14 to clear the road. The personnel may be needed or they could continue on to Leavenworth. As soon as the situation develops more an order will be sent for all or such parts as can be spared to push on to Leavenworth.

The same place (14) was selected for the collection of the slightly wounded. They could here receive attention from the personnel of the field hospitals and be sent on to Leavenworth, those that could walk doing so, the others on empty wagons and the more severely wounded in the ambulances. These slightly wounded would reach 14 by walking or riding on empty ammunition wagons going to the rear, and the chief surgeon would probably order some of the ambulances to take loads as far as that point and return to the front. All who could walk would be required to do so.

General A does not expect to have a heavy expenditure of ammunition; but must be prepared for it. Especially is it

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necessary to provide an ample supply for his guns since he depends a great deal on their long range fire for his success. The battalions have enough with them to last for a long time —probably more than will be used during the day—yet it is better to be certain of enough and for that reason one section of artillery ammunition is turned toward 50 where it can be promptly available. It may be asked, why not send it through Platte City? Because that bridge is being used to its full capacity and sending the ammunition that way would cause unnecessary confusion. It will arrive in ample time by the way it has been ordered and, if not needed in the first position, as it probably will not be, it is more convenient to the second and also for ultimate withdrawal.

The same explanation applies to the small arms ammunition.

The remainder of the ammunition columns are halted at first on the 50—12 road. They will probably not be needed; but General A issues his order in this form believing that by the time the columns reach this point the situation will have cleared sufficiently so that he can be certain as to whether he will need any part of his ammunition and, if he does not, he can then order it to continue its march to Leavenworth.

The movements of the trains need no further explanation. They are so timed as to keep the trains clear of the marching troops and to keep the column moving nearly continuously through the defile at 14 until all have passed. Another thing to be looked after is to keep the two stretches of road 15—52—and 49—12 clear, if possible, after the fighting has begun; by these roads the wounded must be sent to the rear and by them at the last the advanced troops must retire. The division headquarters wagons are the last to move; this gives ample time for the staff to finish its work.

The orders should not reach too far into the future. General A can only get his troops into the best position he can to

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meet probable contingencies; he must then watch events and give orders as necessary to meet conditions as they arise. For this reason he takes position near the front. He has kept in his own hands the fixing of the time for the artillery and the 1st Brigade to withdraw. For them to stay too long would be as fatal as their leaving too soon. Another reason for his keeping well to the front is that he must keep himself well informed as to how the movements are progressing, especially of the trains, and he will doubtless have a staff officer at 14 to keep him posted and a telegraph line connecting him with that point. Another staff officer might be charged with seeing that orders are given to the engineer battalion and the ammunition columns to move at the proper time.

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PROBLEM 2

Arrangements for the March

Situation:

That of Problem 1, including the solution. Outpost supports and pickets are furnished by the 1st Battalion, 3d Infantry, and Troop A, 10th Cavalry. Messing is by company. Reveille has been ordered for 4.30 A. M., May 2. Assume that the enemy does not attack before 6 A. M.

Required:

The orders of the commanders, 1st Brigade, 2d Brigade, 3d Brigade, 10th Cavalry, and Artillery Brigade—issued before 6 A. M.

Solution, 1st Brigade:

Brigadier General B should receive his first order by 2.40; his staff is supposed to be with him.

To Lieutenant L:

> My compliments to Colonel M, 1st Infantry, and direct him to have his cooks called immediately and prepare coffee as quickly as possible; then have his regiment turned out. Brigade will march in less than an hour. Colonel M to report to me with his quartermaster as soon as he has attended to this order. No bugle calls to be sounded. Unnecessary noise to be avoided.
>
> Lieutenant L, you will also give the same message to Colonel N, 2d Infantry.

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Lieutenant P, take that same message to Colonel O, 3d Infantry.

When the officers thus summoned have assembled, General B issues the following order:

Two Red divisions are moving on Platte City. The leading division on the Tracy—7 road camped last night with outposts 6 miles north of Tracy, the other is on the 41—43 road about six miles further to the north.

This brigade will take up a position to check the enemy's advance until the division can be properly withdrawn. The 10th Cavalry will be on our left; the artillery brigade will support us by 5 A. M.

Colonel M, as soon as your regiment has loaded its wagons and the men have had their coffee, and this not later than 3.30, you will move north across the farm road running west from 9 and take position with your left north of the west end of the said road. You are also charged with looking out for our right flank. Keep up a strong reconnaissance to the front and prevent the enemy's reconnoitering our position.

Colonel N, your regiment will move at the same time as the first, and take position with your right joining the left of that regiment. Send a battalion to the timber to your northwest towards 43.

Colonel O, send your 2d Battalion and machine platoon to near 21 to cover our left and support the cavalry. The remainder of your regiment will constitute the brigade reserve and will take post under cover about one thousand yards in rear of the center of the line.

As soon as the troops are in position as just ordered your 1st Battalion will be relieved from outpost and join you. Give this battalion an opportunity to make coffee after being relieved.

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All the field trains must be ready to march at 3.30 with head of column at 15 in following order: 2d Infantry, 3d Infantry, 1st Infantry.

Captain P, Quartermaster 1st Infantry, will have charge of the trains which are to be joined by that of the 10th Cavalry. The tail of the entire train must clear 15 before 4 A. M.

Captain P, you will move by D—E—10—12 on Leavenworth with trains. Hasten your march as much as you can consistently with keeping trains well closed up and in good order.

We must gain time for the division to withdraw and will not fall back until so ordered.

Messages should be sent to the farm house near orchard about six hundred yards south of center of line.

On receipt of the 4 o'clock order, General B furnishes the three colonels and Major D, Medical Corps, with the following:

One regiment of field artillery will soon go into position to the right rear of our line. Another regiment of field artillery will, at the same time, go into position near the Harris house in rear of our left.

Our 2d Brigade is marching to take position at E to support us if necessary or to cover our withdrawal.

14 is designated as the collecting point for the slightly wounded. In case we become engaged, wounded should be sent as early as practicable into the timber south of the center of our line where a dressing station will be established. Regimental commanders will have their bands report to their surgeons to assist in this. Those wounded who can walk will, after receiving the first attention at the dressing station, be required to walk to 14. The emptied ammunition wagons will be turned over to the senior surgeon to be utilized in moving the wounded.

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Major D (senior regimental surgeon) will take charge of the dressing station and promptly forward to 14 such wounded as he can.

The four ambulance companies of the division will soon be parked just south of Tracy.

Before issuing his combined order General B has explained to Colonel X his proposed dispositions. No other orders would probably be issued before 6 A. M.

2d Brigade, orders of Brigadier General C:

On receipt of the first order General C directs a staff officer as follows:

Give my compliments to each regimental commander and tell him that the brigade will march at 5.40 this morning; that reveille has been moved forward to 3.45, breakfast immediately following reveille; that regimental commanders and their quartermasters will report to me at 4.15.

The camp officer of the day would have been sent for and the same information given him—this that he may give orders as to calls and the awakening of the cooks.

On receipt of the 4 o'clock order when the regimental commanders have assembled as directed, General C issues the following order:

Two hostile divisions are moving on Platte City. The leading one on the Tracy—7 road camped last night with outposts six miles north of Tracy; the other one is on the 41—43 road about six miles farther to the north.

Our 1st Brigade and the artillery are in position between the Tracy—7 and 41—43 roads with the cavalry to their left.

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This brigade will move to E to support the 1st Brigade and if necessary to cover their withdrawal.

The brigade will be formed in column of squads in the following order; 4th Infantry, 5th Infantry, 6th Infantry—head of column at eastern edge of town at 4.50 A. M.

Each regimental commander will direct four mounted orderlies to report to Lieutenant G at my headquarters at 4.40. Lieutenant G, with these men, you will trot out ahead as soon as the column moves. No other advance guard will be formed.

The field trains, in order of the regiments in column will be formed ready to move at 5.30 A. M. Captain R, Quartermaster 4th Infantry, will be in charge. The trains of this brigade will be joined and followed by those of the engineer battalion, signal company, and ambulance companies. From 56 this combined train will join and follow the division trains under Major Q.

I will be at the head of the column.

General C then sends one officer of his staff to General B to learn his dispositions and those of the cavalry.

At 5.55, as the head of the column reaches E, General C gives the following order to Major G, commanding the leading (1st) battalion:

Major, a strong force of the enemy is moving on Platte City from the north by the Tracy—7 and the 41—43 roads. Our 1st Brigade and artillery are in position between these two roads and north of the 13—15 road. Our cavalry is covering their left. A battalion of infantry from the 1st Brigade is near 21. This brigade will take a position in readiness near here.

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Send one company of your battalion to Spinner's and take the other three companies and machine gun platoon to the northwest to the north edge of that timber. You will cover the brigade from those directions.

To the Colonel of the 4th Infantry:

Send an officer and ten men to the farm road running southwest from 17.

General C then forms his regiments as follows: 4th Regiment in line of masses northwest of E, the other two southwest of E, leaving both roads clear. The men stack arms and rest. A mounted officer is sent to General B and Colonel X to inform them of his dispositions.

3d Brigade, orders of Brigadier General D:

On receipt of the first order at about 2.40 A. M. General D sends the following message to each of his regimental commanders:

This brigade will march at 3.45 A. M., followed without distance by its field trains. Have your cooks called immediately and prepare coffee as quickly as possible and later have the regiment turned out. No trumpet calls to be sounded.

Colonels with their quartermasters will report to me at 3.15.

At 3.15 A. M. General D issues the following orders:

Two hostile divisions are moving on Platte City. The leading one on the Tracy—7 road camped last night with outposts six miles north of Tracy, the other one is on the 41—43 road about six miles farther to the north.

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Our 1st Brigade and the divisional cavalry is west of the Platte.

This brigade marches at 3.45 this morning by 50 on 10. Order of march: Lieutenant H and twelve mounted orderlies as advance guard—7th Infantry—8th Infantry—9th Infantry—field trains without distance.

Captain X, Quartermaster 8th Infantry, will have charge of the train which will be followed by that of the artillery brigade.

The combined trains will follow the brigade without distance to 50, thence proceed directly to Leavenworth.

Each regimental commander will detail four mounted orderlies to report to Lieutenant H at 3.40.

On receipt of the 4 o'clock order of the division commander, General D will have no occasion to issue new orders but will give the information he has just received to his colonels.

The brigade will probably reach 10 shortly before 6 A. M., when General D will give the following order to the colonel, 7th Infantry:

Send one section under a good sergeant to that knoll due west of us to observe to the north and west; send another section to the knoll north of Meas.

He then has the brigade form, closed up, south of Meas and clear of the roads. The men stack arms and rest.

Artillery Brigade, orders of Brigadier General E:

By his two aides, one to each regimental commander:

The enemy is approaching from the north. The brigade moves into position to oppose him, starting at 3.45 A. M.

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Have your regiment turned out immediately, coffee made and horses given a light feed. No trumpet calls will be sounded. Our field train will join that of the 3d Brigade on the 56—Platte City road and must be south of the A—B road before 3.45.

Regimental commanders will report to me at 3.15 A. M.

He then sends Captain P to General B, 1st Brigade, to learn his dispositions and then await the reconnaissance officers at the bend in the road northwest of Tracy.

At 3.15 General E gives the following order:

The enemy has a strength of two divisions but with no cavalry except the one small brigade that was in our front yesterday.

We move at 3.45, 1st Regiment leading, and must clear Tracy as promptly as practicable.

The 1st Regiment will go into position about one mile north of 15, the 2d Regiment about one mile north of the first bend in the road northwest of Tracy.

The engineer battalion will be available to improve or open roads for the movement of the guns.

Each regimental commander will go in advance with the necessary assistants to reconnoiter his position and the best line of approach thereto. The 1st Brigade is already near there. I have sent Captain P to General B. Captain P will meet the reconnaissance officers at the bend in the road referred to and orient them as to the 1st Brigade.

The field trains will form south of Platte City on the road to 56, that of the 1st Regiment leading. The 1st Regiment must have all its wagons south of the A—B road before 3.45. The train will follow that of the 3d Brigade to Leavenworth.

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On receipt of the 4 o'clock order General E will not issue a further order but will give all the additional information to his regimental commanders.

10th Cavalry, Orders of Colonel X:

On receipt of the first order at about 2.40 he has the regiment turned out at once without sounding trumpet calls; cooks are ordered to prepare coffee as quickly as possible, and the men directed to give their horses a light feed of grain.

The men then pack saddles and load the wagons. By that time the coffee should be made and would be issued to the men. As soon as the men could drink their coffee they would saddle up and be ready to start.

Colonel X then assembles his officers and gives the following order:

> A force of two hostile divisions is moving from the north on Platte City. The leading division went into camp at 6 P. M. last night with outposts six miles north of Tracy on the Tracy—7 road; the other division is about six miles farther north on the 41—43 road. The only hostile cavalry is the two regiments that were in our front yesterday.
>
> Our 1st Brigade is moving into position on the spur between the two roads mentioned about a mile north of here, with a battalion near 21, a detachment in the edge of the timber southeast of 43 and another north on the Tracy—7 road.
>
> By 5 A. M. the divisional artillery will be with the 1st Brigade.
>
> We are to cover the left of the 1st Brigade and carry on a vigorous reconnaissance.
>
> The regiment will move provisionally to hill 1000 north of 27.

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Lieutenant B and four men from Troop B will move north along the Tracy—7 road and get such information as possible of the enemy's movements.

Lieutenant C and four men from Troop C will move north along the 41—43 road for the same purpose.

Both will push well to the front, avoiding notice by the enemy. You are to seek information only.

Captain Z (Troop B), send a patrol of eight men north on the Tracy—5 road, another on the Tracy—7 road and one on the 41—43 road and one on the 23—39 road. These patrol leaders will be instructed that their mission is to prevent reconnaissance by hostile patrols.

Captain Z, you will, as soon as you have sent out these patrols, move out towards Weston with the remainder of your troop to near the stream between 29 and Weston; observe from the Missouri River to the 37—35 road. Prevent reconnaissance by hostile patrols.

Colonel X directs that Troop A, on being relieved from outpost, assemble and join the regiment. He then marches to hill north of 27 to await more information.

On reaching this latter point he sends out a patrol of one squad under an officer from Troop C, to observe to the north from 35 and to prevent reconnaissance by hostile patrols.

On receipt of the 4 o'clock order he issues no further orders but gives the information to his squadron and troop commanders.

His proposed dispositions were communicated to General B when they conferred together.

Comments:

In the orders of the commander of the 1st Brigade, 3d Brigade, artillery brigade and engineer battalion, time is taken to feed horses and provide light breakfast for the men.

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This may not meet with general approval, especially as regards the 1st Brigade and cavalry; but it is believed to be correct. These organizations will be ready to move in time unless the enemy makes a night attack and in such case the outposts will give the time necessary to put in the troops as they are already up and dressed.

The importance of not working and fighting men without food, if it can be avoided, cannot be exaggerated. The importance in the case of horses is also great.

For Colonel X to have his horses fed will probably delay him ten minutes at the outside. The grain for the morning feed is put in the nosebags the night before; to hang these on the horses heads does not take long. Then, while the men pack saddles in the dark, load the wagons, etc., the horses are eating.

As close to the enemy as these troops find themselves and under the existing circumstances, the caution not to sound trumpet calls needs no justification.

In the 2d Brigade there was no rush, so reveille was merely moved up a little.

The commanders of the 2d and 3d Brigades order practically no advance guard. They are in rear of our battle line and none is believed necessary. The use of what amounts to a strong mounted patrol in front of each brigade will in no way delay the movement and will furnish all the protection necessary.

One thing to be noticed is the care that each commander takes to learn the dispositions of his neighbors. That is important.

Tactical Dispositions, 10th Cavalry:

Colonel X, on receipt of his order, appreciates fully the situation. He is outnumbered in cavalry two to one and yet information of the enemy's movements is important and more important still is it to prevent the enemy from reconnoitering our position. By preventing hostile reconnaissance and

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possibly causing a hasty or wrong deployment time is gained; and every delay to the enemy is to our advantage. Colonel X cannot go out with one regiment against a brigade with much hope of success. He believes it best to hold most of his regiment together as he has placed it, to prevent reconnaissance by any small parties of the enemy and, should the whole hostile brigade move out against his regiment, he will have the support of the battalion at 21.

Colonel X sends out two patrols under officers to gain information of the enemy. This in his instructions he makes clear to them. They are supposed to be intelligent and instructed. The roads they are to follow are designated, but, taking this with the remainder of the order, they will understand that these roads are to be considered as directions and not to be marched on. They would in no case interfere with a hostile patrol if not forced to do so. They are to seek information not by force but by cunning.

Colonel X sends out other patrols of a different character who are to prevent hostile patrols from learning anything. Ordinarily patrols like these latter on the Tracy—7 and 41—43 roads, whose mission is to screen, would be backed up by a larger force of cavalry. It is not necessary in this case as the distance to the enemy is so short and these patrols are backed up by infantry.

1st Brigade:

General B's disposition look somewhat like undue dispersion and indulgence in advanced positions. This would be the case if his brigade were operating alone or if he intended to fight to a finish. His object is to gain time. By preventing all reconnaissance, except by a strong force, time will certainly be gained.

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PROBLEM 3

Dispositions of the Covering Troops

Situation:

The same as that of Problem 1, including the solutions to Problems 1 and 2.

Required:

1. The orders issued by the colonel of the 1st Infantry.
2. The orders issued by the major, 2d Battalion, 2d Infantry.
3. The orders issued by the major of the battalion, 2d Infantry, detached.
4. Orders of Major G, 4th Infantry.

Solution, Ist Requirement:

Orders of Colonel M, 1st Infantry.

Having his regiment formed and ready he marches in column of squads to the north edge of the trees just south of the orchard. As he is within the outpost line no advance guard formation is necessary. He there assembles his field and staff officers and company commanders and issues the following order:

> Two hostile divisions are advancing on Platte City, one on the road to our right, the other on the road to our left. The former went into camp at 6 P. M., last night with outposts six miles north of Tracy, the other was six miles farther north.
>
> Our division will continue its march to Leaven-

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worth today. This brigade and the cavalry are to take up a position to check the hostile advance. All of the artillery of the division will be in position to support us by 5 o'clock.

This regiment will hold the right of the line, the 2d Battalion on the left. The battalions will be moved to the rear of their positions and will put out a few scouts each, but will not deploy until more is known of the enemy's intentions.

The 3d Battalion will move on the Tracy—5 road, thence north to 5. This battalion will cover our right and front from east of 5 to west of 7, prevent reconnaissance and delay the enemy's advance and force him to as early a deployment as possible. There will be a battalion of the 2d Infantry in the woods near 43.

The battalion will avoid becoming closely engaged and in falling back will do so by the Tracy—5 road.

On receiving the later instructions of the brigade commander the following information would be given to all subordinate commanders:

A dressing station will be established in the grove just south of our line. 14, on the road to Leavenworth, is designated as collecting point for the slightly wounded.

The band will report to the surgeon without delay to assist in removing the wounded.

2d Requirement: The orders of the major, 2d Battalion, 3d Infantry:

On receipt of his orders he marches his battalion by the 15—19 road to 21, and after looking about moves to the northeast about 600 yards and halts. He then assembles his officers and issues the following order:

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Two hostile divisions are advancing on Platte City, one by the Tracy—7 road, the other by the 41—43 road. The former camped last night with its outposts 6 miles away, the latter 6 miles farther north.

Our brigade and the artillery of the division are taking up a position between the roads about 1000 yards north of our last night's camp. The cavalry is to our west.

This battalion will remain near here for the present to cover the left of our line and support the cavalry.

Lieutenant A will take one platoon from Company E and move into the woods near 39 and cover us on the north from where the 39—41 road crosses the stream to a point about one-half mile west. Permit no hostile patrol to get through.

Captain A, from the remaining platoon, will send one squad south of 23 to near the Hall house to look out for our left flank; with the rest of his men he will take position on the ridge in our front.

The remaining companies will stack arms and rest.

3d Requirement: The orders of the major commanding the 1st Battalion, 2d Infantry, sent toward 43:

The major, on receiving his orders, assembles his officers and issues the following order:

Two hostile divisions are moving on Platte City from the north, one on the road to our right, the other on the road to our left. The former went into camp last night at 6 A. M. with its outposts six miles north of Tracy, the latter six miles farther to the north on the 41—43 road.

Our brigade, supported by all of the divisional

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artillery and with the cavalry on our left, will take up a position just north of here on the ridge.

This battalion will move to the northwest to those woods as an advanced post to cover the brigade, force an early deployment of the enemy and prevent hostile reconnaissance.

Company A will constitute the advance guard and will march 500 yards in advance of the main body, the objective being the point where the railroad to our left crosses the wagon road in our front.

I will march at the head of the main body.

Move out.

On reaching the railroad crossing the major gives the following additional orders:

Captain A, send a lieutenant and one section to a point near 43 with instructions to observe the country west from there to the woods and to have a patrol north on the road. Instruct him that he must prevent all hostile patrols from crossing his line; his mission is to prevent hostile reconnaissance. You will send a sergeant and two squads to the northeastern corner of this woods; they will look out for the advance of the enemy along the Tracy—7 road and inform me of any important developments in that direction. They will also prevent reconnaissance by hostile patrols.

You will also post a double sentinel at the road crossing to watch in the direction of our two detachments.

To the company commanders:

In case the enemy appears in our front we will resist his advance and on retiring must do so by the 43—41 road and assemble behind the regiment.

Have your companies stack arms and rest.

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4th Requirement, Orders of Major G, 4th Infantry:

Having received his orders from the brigade commander, he assembles his captains and gives the following orders:

> Two hostile divisions are approaching from the north, one on the Tracy—7 road, one on the next road to the west. The former camped last night with outposts six miles north of Tracy, the other was six miles farther north on the other road.
>
> Our 1st Brigade and the artillery are in position between these two roads about two miles to our north. The cavalry is west of them. One battalion of the 2d Infantry is about one and a half miles north of where this battalion is to go. Our brigade is to remain here as second line. This battalion is to cover our brigade and assist in preventing any hostile reconnaissance.
>
> Captain A, take your company and move west on this road to the Spinner house on the bluff overlooking the flat, keep a sharp lookout for any movement of hostile troops.
>
> With the other three companies I shall move to the northwest to the northern edge of that wood you see there.

As soon as Captain A has moved out with his company, Major G conducts the other three companies to near the north edge of the woods just west of the little stream.

He then points out to his captains the hill near 21 as the location of a battalion of the 2d Infantry and the general direction of the cavalry.

He then posts a few lookouts, has the machine guns unpacked and made ready for action, cautions his men to keep out of sight from the north, and has the companies stack arms and rest.

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Comments:

In moving out, only one battalion, the 1st Battalion, 2d Infantry, has formed an advance guard. This battalion has advanced beyond the outpost line—in this case it was necessary.

The battalion, 3d Infantry, moving to 21, was covered by the cavalry. The battalion, 4th Infantry, is amply covered by the troops in its front.

The number and size of covering detachments at first sight may appear excessive. A closer study will, it is believed, lead most officers to concur in these dispositions. One great object is to hamper the enemy in his efforts to learn our strength and dispositions. We do not expect a victory nor a battle fought to a decision, or we could not afford to make so many detachments. If we can oblige the enemy to deploy considerable forces to find out whether our line is on the 43—7 road or a mile farther back, we will gain a good deal of time. If his patrols can get through and find out where we are he can form his plan of attack and carry it through without delay; otherwise he must move cautiously and hence more slowly.

That these outlying battalions must cover themselves, and especially that such a force as the 2d Brigade must do so, goes without saying.

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PROBLEM 4

As the Enemy Advances

Situation:

The same as in Problems 1 to 3, including the solutions.

Up to 6 A. M. there has been considerable firing by patrols. Many hostile patrols, mostly cavalry, have been pushed toward our position, but so far as known, all have been killed or thrown back.

About 5 A. M. a troop or more of cavalry appeared near 43 and another near 37, but both were driven off with heavy loss. A squadron also advanced down the road from Weston but was driven off by Colonel X.

At 6 A. M. information is received that the enemy is advancing in force on the Tracy—7 road, the point of his advance guard at 5.50 A. M. being about one mile north of 7.

Shortly after 6 A. M. Colonel X, 10th Cavalry, learns that there is about one regiment of cavalry moving down the Weston road against him and that another regiment is moving east past 35.

Required:

1. Orders and plan of action of major commanding 3d Battalion, 1st Infantry, from 5.50 A. M. until he retires from his advanced position.

2. Plan of action and orders of Colonel X, 10th Cavalry, in view of impending attack by hostile cavalry.

3. Orders and plan of action of the major, 2d Battalion, 3d Infantry, if our cavalry in retiring is pursued by hostile cavalry.

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4. Orders and plan of action of the major, 1st Battalion, 4th Infantry.

Solution, 1st Requirement:

The major commanding this battalion has his machine guns unpacked and ready for action, his command concealed as much as possible, behind the ridge north of the 7—5 road. Main body near 7.

As the enemy's advance guard approaches in the normal formation, with about one company in the advance party, the major will open fire on it when the point is at close range. As the enemy's advance guard deploys more men, so will our major, bringing his machine guns into play as soon as there is a good target. The major, having had the ranges marked, will fire rapidly. His fire should be effective enough to compel a deployment of nearly a regiment or else the use of artillery, as he will hold out no reserves.

When the enemy has deployed a largely superior force and the advance is within 800 or 1000 yards of him he will order his battalion to fall back, at first in skirmish line, assembling as soon as he is able. If pressed too hard he will remain deployed until he reaches the ridge east of 9 under the protection of our guns.

2d Requirement:

Colonel X immediately concludes that the enemy proposes to attack him in front with one regiment, and on his flank with the other. He promptly decides to retire.

He first sends a messenger to the battalion near 49, another to the battalion near 21 and another to the artillery near the Harris house. To all three he gives this message with instructions to ride at top speed:

> Will soon be attacked by two regiments of cavalry and shall retreat through 21 by both roads. Expect to be pursued.

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He then orders the regiment to mount, except one troop, and gives this order:

> We will fall back before the enemy. If he pursues as I expect he will be checked by our friends. As soon as he is driven back turn about and reassemble at 21. Leading squadron move south from 21, next squadron continue on this road, next follow the first. The dismounted troop will mount and follow as soon as the others have started. Move out at a gallop.

3d Requirement:

The major at once repeats the message to his captains, and orders his companies to deploy at one man to the yard. D Company on the left; to the right, C, then B. The left of the line is at southeastern end of nose; it follows the ridge to west and north; the machine guns are at the salient. The men are directed to keep out of sight from the west until ordered to open fire. The major does not propose to open fire until at least a squadron has passed 21, in case the enemy turns south, but will open sooner if the enemy keeps straight on towards 19.

4th Requirement:

The major repeats the message to his captains, then orders his machine guns placed in position on the nose in the angle of the two little streams; B Company to deploy to the left of the machine guns, C to the right between the stream and road, D Company in reserve; fire not to be opened until ordered by him.

He then sends a messenger to his brigade commander to give him the information just received from Colonel X.

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Comments:

The point it is desired to bring out in this problem is the importance of commanders keeping themselves informed of the location of friendly troops in their vicinity. If such information be not possessed by commanders, many opportunities will be wasted and team play will be impossible.

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PROBLEM 5

Preparations for Retiring

Situation:

A continuation of the situation given in Problems 1 to 4 and their solutions.

At 6.30 A. M., the 3d Battalion, 1st Infantry, was still holding its position, the enemy had extended to the west and had been opened on by the battalion of the 2d Infantry which had moved toward 7 as the fight developed.

Required:

1. The recommendations and instructions of the chief surgeon.

2. The orders issued by the division commander from 4 to 6.30 A. M.

Solution, 1st Requirement:

The chief surgeon, after consulting with the chief of staff at 6 A. M., recommends: that one of the ambulance companies be ordered to the dressing station established by the 1st Brigade and to take over the same; that one of them be sent to 14 to care for the slightly wounded and take charge of sending them to Leavenworth; that the other two ambulance companies be held near division headquarters for the present but that, as soon as it becomes apparent that one of them will not be needed by the troops of the first line, that it be sent to park off the road near 12. He also recommends that the field hospitals continue on with the trains to Leavenworth.

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2d Requirement:

By 5 A. M. the division commander with his staff moved from Platte City to the little orchard beside the road about 1000 yards east of 15 and through his staff learned of the dispositions which had been made and approved them.

He then orders the captains of the signal company as follows:

> The 2d Brigade is near E, the 3d Brigade is near 10, I have a staff officer near 14. Lay a wire from my headquarters to near 14 with a station at E and one at 10.

At 6 A. M. the following written message is sent to Major Q in charge of trains via 50:

West of Tracy,
2 May, 6 A. M.

Major Q:

> The order for the four field hospitals to be left at 14 and the sections ammunition columns to be halted between Alexander and 50 is revoked; they will continue on to Leavenworth in their present position in the column. The order as to the leading sections ordered to turn north at 50 remains unchanged.

Z,
Chief of Staff.

Later the following messages are sent:

6.20 A. M.

To the Major, Commanding 1st Battalion, Engineers:

> As soon as the work required of you by the artillery at their present position and at 10 is completed you will move to 12 and follow in rear of the trains to Leavenworth.

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Make every effort to complete your work and be in readiness to move from 12 by about 8.30.

Z,
Chief of Staff.

6.30 A. M.

To Captain S, in charge of leading sections, ammunition columns, near 50:

At 8 A. M. move by 52—10 to 12 with your sections of the ammunition columns and follow the trains to Leavenworth.

Z,
Chief of Staff.

Comments:

The orders first given for the ammunition columns and field hospitals and then changed by these later orders may, at first sight, seem to show vacilation. Although it is true that issuing tactical orders too far ahead and then having to change them is bad policy and generally demoralizing, there are exceptions to nearly all rules.

It is evident the trains must move at the earliest hour practicable. At that hour General A does not yet know whether he will want the ammunition with the columns or not; nor does he know whether he may not want the field hospitals. The probabilities are that he will want neither. He therefore arranged the columns so that both would be available, reasoning that, by the time these wagons would be ready to quit the column, he would know whether he would want them or not and, if not, that he could order them to continue on to Leavenworth.

Had the enemy moved in the night and begun his attack at 4 A. M., General A would probably have wanted more ammunition. At 6.30 A. M. he knew he did not need it.

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The order to the 1st sections to move at 8 A. M. seems correct. They cannot pass 14 any earlier. The troops that want more ammunition than they have, if there are any, will be able to get it before that time.

General A wants an uninterrupted movement through 14 until his command has cleared that point.

The engineer battalion will follow the trains, the two sections of the ammunition column will follow the engineer battalion.

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PROBLEM 6

The Withdrawal

Situation:

A continuation of the situation given in Problems 1 to 5. At 7 A. M., General A receives the following reports:

From Captain F, Aide, at 14:

> Movement of trains progressing well. Trains of 1st Brigade and cavalry have cleared this point and division trains commenced passing at 6.40. All moving nearly 3 miles per hour. Well closed up.
>
> Heavy batteries in position as ordered. Captain D, an observing officer, has taken position on knoll about ⅓ mile to the north and is in communication by telegraph with battalion commander.

Major V, Corps of Engineers, reports from 10 that all necessary work for the artillery will be completed by 8 A. M. and that he will be ready to move from 12 at the time specified.

From 1st Brigade, dated 7 A. M.:

> Two advance battalions will withdraw from their advanced position beginning at once. Enemy is bringing artillery against them. Their casualties light.

General A has learned in the meantime that the hostile avalry was driven back and that our cavalry has reoccupied its original position.

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Required:

General A's plan for withdrawing and his orders for carrying it out.

Solution:

After receiving the information in the problem General A is convinced that he will be able to withdraw successfully and that the operation can begin very soon.

He estimates that the last of his trains and the engineer battalion will have cleared 14 by 9 A. M. It will take troops two hours from 9 to reach 14.

He therefore decides to begin withdrawing his troops.

He will first have the artillery brigade fire heavily with all its guns for a while before withdrawing any of them.

The battalion that was at 7 will be directed to proceed by Tracy through 50 to Leavenworth at once; the battalion falling back from near 43, to move by G on 16 to be followed by the battalion at 21 which will be notified to call in its detachments at once.

The cavalry will remain in position until the artillery has withdrawn, then move by G to the south side of Duck Lake and await orders.

By the time this movement has been well started and after the artillery has been firing rapidly for some time, one battalion, 2d Field Artillery, will be withdrawn and sent to near 10. This will be followed in a few minutes by one battalion of the 1st Field Artillery, which will find a position off the road 15—52 between the railroad crossing and the 10—52 road. In a very few minutes this will be followed by the 2d Battalion, 2d Field Artillery, which will join the 1st Battalion. The 2d Battalion, 1st Field Artillery will then withdraw by 15—50 to near Stillings. The two battalions of infantry in reserve will be ordered to proceed to the high ground on the 15—52 road just south of the Rock Island R. R. and there take up a position.

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As soon as the last of the artillery has started, the remainder of the 1st Brigade will withdraw along the 15—D road to 15 and from there move directly on Leavenworth.

After crossing the railroad the two battalions of infantry and the batteries in position near there will constitute the rear guard of their brigade. The brigade commander will withdraw them as soon as his brigade is in column and he sees that there is no block in the road and that the 2d Brigade and the artillery at 10 are in readiness to take up the defense.

Perceiving that everything is all right he now at once orders the artillery to move on to Leavenworth to be followed immediately by the infantry.

The commander of the 2d Brigade will have been informed from the first of the proposed movement and directed to cover it.

The 2d Brigade commander will send at once another battalion of the 4th Infantry to reinforce the one now northwest of E and one to reinforce the company at Spinner. He will then deploy the two remaining regiments on a line from the woods northwest of E to the head of the small stream southeast of E. As soon as notified that he can withdraw or, when he is forced to do so, he will fall back through G covered by the 4th Infantry and the artillery at 10. The 4th Infantry will then follow as rear guard, the battalion at Spinner being the last to move. This brigade will move by 16 to Leavenworth.

As soon as the 2d Brigade is on the flat the heavy artillery will be ordered to open fire, direction being given by use of the map and the aid of the observer.

The artillery regiment will commence its withdrawal by battery as soon as the 2d Brigade reaches G and will be followed immediately by the 3d Brigade.

The light batteries at Stillings will assist the heavy bat-

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teries in preventing the enemy from placing batteries or skirmishers to shoot up the rear guard.

After the withdrawal of the troops once begins it will be continuous and conducted as rapidly as practicable without causing an overcrowding on the roads as that would result in confusion and loss.

The rear guard of the 3d Brigade will probably fall back in line of skirmishers. The ridge must be kept clear, or as nearly so as practicable, until the troops are well on the way to Leavenworth.

The ambulance companies from the start have been sending back to Leavenworth their loads of wounded. A part of a company has been sent to the 2d Brigade and will withdraw with them; part of a company to 10; the others are sent to 14 to withdraw to Leavenworth. What ambulances are left at 10 will withdraw with the last troops and take with them the last of the wounded that can be removed.

The signal company will have followed the engineer battalion except the men actually working the lines in use. These latter will follow the troops.

The orders issued by the division commander would be about as follows:

Verbally to the commander 1st Brigade:

> We will begin the withdrawal.
>
> General, have that battalion falling back from near 7 proceed at once to Leavenworth by 15—50. Send your two reserve battalions along the same road to the high ground just south of the railroad and there take up a position to cover your further withdrawal.
>
> Have the battalion falling back from 43 proceed at once by G—16 to Leavenworth, followed closely by the one at 21. I will give orders to the artillery to withdraw. As soon as it has started, withdraw the remainder of your brigade through 50 and 14 to

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Leavenworth. The troops to be placed in position south of railroad will be withdrawn and follow your brigade as rear guard as soon as your column is well straightened out on the road past them and the road is clear. A battalion of field artillery will support Colonel O, 3d Infantry, south of the railroad. Colonel O will direct the field artillery to withdraw in advance of him.

Verbally to the commander, artillery brigade:

Send one battalion of the 1st Field Artillery at once by 15—50 to near Stillings. They will take position there to cover our final withdrawal from this high ground.

As soon as they are started send one battalion of the 2d Field Artillery to near 10 to take position there; then send the other battalion of the 1st Field Artillery to take position south of the railroad near the 15—50 road and support the 3d Infantry there in covering the withdrawal of the 1st Brigade. The battalion will be withdrawn to Leavenworth when so directed by Colonel O.

As soon as the 1st Field Artillery is all en route withdraw your last battalion at 10.

Withdraw by battery in each battalion as you get road space and keep up a heavy fire with all guns remaining in place.

By telegraph to the commander, 2d Brigade:

The first line is being withdrawn. You will cover the movement. Hold the north edge of the woods northwest of E and Spinner with one regiment; with the others take up a line extending from eastern edge of woods southeast through E. 2d Field Artillery at 10 will support you.

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When notified by me, withdraw by G—16 to Leavenworth.

Later orders, sent as soon as the 1st Brigade has cleared 52:

Withdraw at once.

By messenger to Colonel X, 10th Cavalry:

The withdrawal of the troops will begin at once.

As soon as the last of the artillery is withdrawn from its present position north of 15, withdraw with your regiment through G to the south side of Duck Lake and await orders.

General A, after giving the foregoing orders, proceeds to 10.

Verbally to the commander 3d Brigade:

Take up a position near here to hold back the enemy and cover withdrawal of the other two brigades. The principal danger lies to the east and northeast. Keep the enemy away from the western edge of the high ground until our troops are well started across the flat.

Begin the withdrawal of your brigade and the 2d Field Artillery as soon as the 1st Brigade has cleared 14. You will notify the artillery when to withdraw.

A staff officer will be sent to near Spinner with a signal flag with orders to stand on the Burlington R. R. track and signal O. K. as soon as the 2d Brigade has cleared G.

Orders will then be given for the heavy artillery to open fire on points north of the Rock Island R. R. as directed by the observer, especially to prevent batteries coming into position on the point north of G. Attention will be paid to the vicinity of E and D.

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The 3d Brigade will probably take position with part of its force only near 10, the remainder along the farm road running north from 14.

The troops along the farm road will be the last to quit the high ground, as far as possible over the bluff. They will signal their withdrawal and both the heavy artillery and field artillery at Stillings will then open fire on the ridge.

The last of the infantry will withdraw for some distance in skirmish order.

Comments:

General A has endeavered to keep his command moving toward Leavenworth in a nearly continuous stream. Of course his trains had to precede the troops. As soon as they clear the road the troops begin to follow. Two things are to be avoided: a crowding of the columns, and keeping the troops remaining in one position until the enemy gets too close. The danger in such a case lies in starting troops too soon and causing a jam with consequent frightful losses.

Another thing for General A to consider is that the second hostile division will probably appear between 7 and 8 A. M. and if it hurries artillery to the end of the ridge north of G it will make much trouble. The last troops of the 2d Brigade might check such a movement for a while, but would not be very effective for long. They are speedily withdrawn and the heavy batteries given that work to do.

The troops withdrawing through G will double the columns marching beyond 16. This does not matter, however, as the infantry can march in the fields beside the road.

General A must also provide for holding the western edge of the high ground to the last. His idea throughout his withdrawal is to maneuver the enemy toward the Platte. If he succeeds as planned he should complete his withdrawal with no more loss than he inflicts, if even as much.

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Organization of 1st Blue Division.

FOR USE IN SOLVING PROBLEMS, SERIES B, C AND D.

Division Commander	Major General A
Chief of Staff	Colonel X
Division Surgeon	Lieut. Col. M. D.
Provost Marshal	Colonel Z

1st Brigade	2d Brigade	3d Brigade
Brig. Gen. B	Brig. Gen. C	Brig. Gen. D
1st Infantry	4th Infantry	7th Infantry
2d Infantry	5th Infantry	8th Infantry
3d Infantry	6th Infantry	9th Infantry

Artillery Brigade
Brig. Gen. E

1st F. A. Reg. 2d F. A. Reg.

1st Cavalry	1st Battalion, Engrs.	Co. A, Signal Corps
Colonel F	Major G	Captain H

Ambulance Companies	Field Hospitals	Ammunition Artillery Companies	Columns Small Arms Companies	Supply Trains Sections
1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2	1, 2, 3, 4

Medical Reserve Pack Train

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Series B*—Covering the Advance of the Army

PROBLEM 7

A Flank March

GETTYSBURG GENERAL MAP AND GEOLOGICAL SURVEY MAP

Situation:

The boundary line between the Blue, west, and Red, east, is along Parrs Ridge, thence along Cordorus Creek to the Susquehanna, thence northwest and north along this river. War has very recently been declared. A Western Army is advancing from the west to concentrate about Gettysburg.

The 3d and 4th Divisions by the Chambersburg Road.

The 2d Division on Marshall.

The 1st Division was moved partly by the B. & O. R. R. and partly by marching to Frederick.

The cavalry division, now completing its mobilization near Carlisle, will join on May 18.

The 1st Division completed its concentration at Frederick on the afternoon of May 15 and camped south of Rock Creek where General A received the following message:

1st Field Army,
Chambersburg,
15 May 1911.

Major General A,
Commanding Division,
Frederick.

The frontier is observed by hostile detachments. The enemy's main army is being organized about

*Army School of the Line, 1911-12, Course in Tactics—Part IV, Map Problems Nos. 1 to 5.

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Baltimore and Washington. The greater part of his army is not yet ready to move although one division and possibly more are ready and may have moved west today.

Our army will advance so as to reach Gettysburg on the 18th.

The commanding general directs that you advance tomorrow on Gettysburg and cover the exit of the army from the mountains.

Y,
Chief of Staff.

Required:

1. General A's march order for May 16.
2. Briefly, his reasons for his dispositions.

Note: Frederick is a depot of supplies; the 1st Division will have to depend on this until the army is concentrated at Gettysburg. The railroad is not in operation beyond Frederick.

Weather, fair; roads, in good condition; moon rises May 15th at 7 P. M.

Solution, 1st Requirement:

1st Division,
Frederick,
15 May 11, 9 P. M.

Field Orders
No. 1

Troops
a. Independent Cav.:
Col. F
1st Cav.
1 sec. Sig. Co.

1. The frontier is being observed by hostile detachments. The enemy's main army is about BALTIMORE and WASHINGTON. The greater part of his army is believed to be unprepared to move. One division and possibly more are ready and may have moved toward the frontier.

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Our army will advance so as to reach GETTYSBURG on the 18th.

2. This division is ordered to advance on GETTYSBURG and cover the exit of the army from the mountains.

We will begin the march tomorrow.

3 **a**. The independent cavalry will start at 5-30 A. M. and cover the movement. It will reconnoiter TANEYTOWN and the roads leading southeast from there.

b. The advance guard will march on EMMITTSBURG TURNPIKE and clear the first railroad crossing north of town by 6-30 A. M.

The crossings of the MONOCACY and their approaches from the east will be observed.

c. The head of the main body will start from the first railroad crossing north of town at 6-50 A. M. and follow the advance guard at about 1 mile.

b. Advance Guard:
Brig. Gen. B
1st Brig.
1st Bn. 1st F. A.
Co. A Engrs.
1st Amb. Co.
1 sec. Sig. Co.

c. Main Body—in order of march:
1 sec. Sig. Co.
1st Bn. 4th Inf.
1st Brig. F. A. (less 1 bn.) firing btries. only
2d Brig. (less 1 bn.)
3d Brig.
1st Bn. Engrs. (less 1 co.)
Sig. Co. A (less dets.)
F. A. C. Tn.
3 amb. cos.

4. The field trains will assemble north of the town after the troops have cleared the place.

The trains will be divided into two sections as follows:

1st Section in the following order: field trains; 1 section supply column; one wagon company, artillery ammunition; and one wagon company, small arms ammunition.

2d Section: field hospitals; ammunition column (less 2 wagon companies); supply column (less 1 section); medical reserve; pack trains.

The 1st Section will follow about two miles in rear of the troops. The 2d Section will follow the first at about two miles.

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5. The division commander will remain in FREDERICK until 8-30 A. M. and will then join the reserve of the advance guard.

A,
Major General.

Copies by Lt. K, Aide, to Generals B, C, D and E. By Lt. L, to Col. F, Maj. G, Capt. H, and commander of trains. Verbally to staff. Copy by mail to army headquarters; synopsis by telegraph.

2d Requirement:

The route: The Emmittsburg Turnpike is the best road to Gettysburg. For the first day's march the division will be between the mountains and the Monocacy. If attacked by superior numbers in front or rear it is not disadvantageous, if attacked in flank by a superior force General A might find himself cramped. A weaker force across his front, in several places could cause him much more trouble than if he had more room. From the information received General A does not expect to meet the enemy today, so he takes the best road.

He is fairly strong in cavalry; his information of the enemy is not very definite, far reaching reconnaissance is what he needs; hence the cavalry is made independent. Taneytown is especially mentioned in the order to the cavalry as it is reached by good roads from both Baltimore and Washington and is nearly certain to be reached by hostile troops moving against General A. Colonel F would probably send a reconnaissance party there without special instructions; still it is too important to take any chance of its being neglected.

Size of the advance guard: So large an advance guard as that detailed for this march is probably not necessary today. General A has in mind the objections to break-

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ing units and probable needs in the near future. The engineer company is attached to repair bridges, etc., if found necessary.

A flank guard is not deemed necessary today but the crossings of the Monocacy should be observed from the far side. There are sufficient mounted scouts to do this.

The trains are arranged on the supposition that an engagement is not probable today and yet if it should come everything necessary will be available in good time. The intervals are more for convenience in marching than for tactical reasons.

The march is something of a flank march, hence the shorter the column the better.

General A remains behind to see his division form and start. It is its first movement since concentration, and he wants to see how they march out, how duty is performed, etc. It would not be advisable for him to delay in this way if he were supposed to be near an aggressive enemy.

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PROBLEM 8*

A Halt for the Night

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP

Situation:

During the day's march on the 16th reports from the cavalry were to the effect that mounted patrols were encountered about Lewistown and Utica Mills. Later, when the cavalry reached Jimtown, it encountered a weak regiment of cavalry which was defeated and driven with heavy losses across the Monocacy at Millers Bridge, where pursuit was checked.

The inhabitants reported that there were hostile troops at Westminster the night of the 15 / 16, but the information was very vague. All wires leading in that direction had been cut.

Required:

1. General A's orders for the night of May 16th.

Continuation of the Situation:

After the 1st Division had gone into camp for the night further reports, the last about 10 P. M., were received from the cavalry, mostly from officers' patrols. The substance of these was that about two-thirds of a hostile division had gone into camp for the night between Taneytown and the Monocacy; that the roads leading to the eastward from that place were free of the enemy for the last eight or ten

*A continuation of Problem 7.

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miles; that Bridgeport was held by the enemy with outposts across the bend of the stream.

Required:

2. General A's march order for the 17th.

Solution, 1st Requirement:

After receipt of the information from the cavalry, Brigadier General B was directed verbally by the division commander to have the 2d regiment of the advance guard leave the column at Lewistown and move by Creagerstown to Loys where further orders would reach it.

1st Division,
Jimtown,
16 May 11, 12-10 P. M.

Field Orders
No. 2

1. Our cavalry met and defeated a weak regiment of hostile cavalry near JIMTOWN this morning and pursued it to the MONOCACY. There is a rumor that hostile troops occupied WESTMINSTER the night of May 15/16.

2. The advance guard will camp as follows: The 2d Infantry at LOYS; the remainder between GRACEHAM and THURMONT. It will establish outpost from RODDY east to the MONOCACY and observe the course of the latter stream from the bridge southeast of CREAGERSTOWN to MUMMY FORD.

3. The 1st Cavalry will camp near the southern outskirts of THURMONT.

Colonel F, 1st Cavalry, will have two troops report to Brigadier General B for outpost duty by 6 P. M.

4. The main body will camp as follows:

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2d Brigade, east of the turnpike between JIMTOWN and EICHOLZ MILL.

3d Brigade west of turnpike opposite 2d Brigade.

Artillery Brigade (less 1 bn.), southwest of EICHOLZ MILL.

1st Battalion, Engineers (less 1 co.), south of the 2d Brigade.

Ambulance companies (less 1st), south of engineers.

Signal Company A, in northwest angle of roads at JIMTOWN.

5. The field trains will join their organizations. The remainder of 1st Section of trains will camp where small stream crosses turnpike south of 391. The 2d Section will camp at 359.

6. Issues will be made at EICHOLZ MILL at 6 P. M.

7. Division headquarters will be at JIMTOWN.

A,
Major General.

Dictated to officers sent to receive orders.

1st Division,
Jimtown,
16 May 11, 3 P. M.

To Colonel F, 1st Cavalry:

From the information received I believe it highly probable that a hostile force of all arms is advancing by TANEYTOWN.

Send out, if not already done, patrols of your best men to investigate thoroughly and report.

Your main body will camp in southern outskirts of THURMONT. Main body camps south of JIMTOWN; headquarters in that place.

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Have two troops report by 6 P. M. to Brigadier General B for outpost duty.

Issues will be made at EICHOLZ MILL at 6 P. M.

By command of Major General A:

X,
Chief of staff.

By Lt. L, Aide.

1st Division,
Jimtown,
16 May 11, 12 NOON.

To the Division Quartermaster:

The command will camp tonight as follows:

Advance guard brigade east of THURMONT, cavalry south edge of town, main body along turnpike south of JIMTOWN. Issues will be made at EICHOLZ MILL at 6 P. M.

Procure as far as practicable stores for tonight's issues in this vicinity, especially of forage. The necessary wagons from the first section of the train will be brought up to make issues. Those emptied will proceed early tomorrow to FREDERICK to fill and rejoin.

X,
Chief of Staff.

2d Requirement:

1st Division,
Jimtown,
16 May 11, 10-45 P. M.

Field Orders
No. 3

1. A force of all arms estimated at about two-thirds of a division is reported in camp near TANEYTOWN.

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Troops

a. Independent Cav.:
Col. F
1st Cav. (less ½ tr.)
1 sec. Sig. Co.

b. Advance Guard:
Brig. Gen. B
1st Brigade (less 2d Inf.)
1st Bn. 1st F. A.
Co. A. Engrs.
1st Amb. Co.
1 sec. Sig. Co.

c. Right Flank Guard:
Col. P
2d Inf.
½ tp. 1st Cav.

d. Main Body—in order of march:
1 sec. Sig. Co.
1st Bn. 7th Inf.
1st Brig. F. A. (less 1 bn.) firing btries. only
3d Brig. (less 1 bn.)
2d Brig.
1st Bn. Engrs. (less 1 co.)
Sig. Co. A, (less dets.)
F. A. C. Tns.
13 amb. cos.

2. This division will continue its march tomorrow on GETTYSBURG.

3 **a.** The independent cavalry will start at 5-30 A. M. and cover the movement; early contact with the enemy will be gained and maintained. Reconnaissance will be made east of TANEYTOWN by specially selected men.

The outpost cavalry will assemble at MOUNT ST. MARY'S by 6-30 A. M.

b. The advance guard will march on the EMMITSBURG ROAD and clear the northern exit of THURMONT by 6-15 A. M.

c. The right flank guard will start from LOYS at 6 A. M. marching on the direct road to EMMITSBURG as far as 481, thence to 468, thence north. It will cover the right flank of the column.

d. The main body will start from the northern exit of THURMONT at 6-40 A. M. and follow the advance guard at about 1 mile.

4. The trains in one section will follow the main body at about 1 mile and in the following order:

1 wagon company, artillery ammunition; 1 wagon company, small arms ammunition; field hospitals; remainder of ammunition columns; field trains; medical reserve; supply trains; pack train.

5. I will be at the head of the reserve of the advance guard.

A,
Major General.

Dictated to officers sent to receive orders.

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PROBLEM 9*

In Contact with the Enemy

GEOLOGICAL SURVEY MAP
EMMITSBURG THREE-INCH SHEET†

Situation:

As the support of the advance guard reached Mount St. Mary's at 8.30 A. M. a delayed report from the cavalry stated that a hostile column began crossing the river at Bridgeport at 7.15 A. M. The cavalry was causing some delay to the enemy but was being forced back.

At 8.35 A. M. long range artillery fire was opened on the flank guard.

At 8.40 a message from the cavalry reported that the enemy was massing behind the fringe of timber extending from Tom's Creek Church north to 422.

Required:

1. General A's decision and, briefly, his reasons.
2. General A's order.

Solution, 1st Requirement:

Decision: To attack at once, enveloping the enemy's left.

Reasons: General A's mission is to cover the outlet from the mountains for the remainder of the 1st Field Army. He cannot do this from a point so far south of Marshall,

*A continuation of Problems 7-8.

†The Emmitsburg three-inch sheet had not yet been completed when this problem and solution were written.—*Ed.*

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and he cannot safely attempt a flank march of his division between the enemy and the mountains. To try to turn the enemy by going into the mountains might easily result in General A's being shut in himself.

General A believes the enemy to be only about two-thirds as strong as himself. It is his duty to attack promptly and drive the enemy back across the Monocacy.

2d Requirement:

1st Division.
Near Mount St. Mary's,
17 May 11, 9 A. M.

Field Orders
No. 4

1. A hostile force of about two-thirds of a division is massing behind the fringe of timber extending from TOMS CREEK CHURCH north to near 422.

2. The 1st Division will attack at once, enveloping the enemy's left.

March conditions now cease.

3 **a.** The 1st Field Artillery will proceed by HAMPTON VALLEY and take position near EMMITSBURG—ST. JOSEPH'S ACADEMY.

The 2d Field Artillery will take position near MOTTERS.

b. The 1st Brigade will attack on the front ST. JOSEPH'S ACADEMY—LONGS.

The brigade commander will detail a battalion of infantry as escort for the 1st Field Artillery.

c. The 3d Brigade will advance by MOTTERS and attack, enveloping enemy's left, its own left on the line MOTTERS—TOMS CREEK CHURCH.

The brigade commander will have the line of the MONOCACY observed by mounted men as far south as the mouth of HUNTING CREEK.

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d. The 1st Cavalry will cover our left and continue vigorous reconnaissance east of the MONOCACY.

e. The 2d Brigade will constitute the general reserve and will take position under cover near the crossroads about 1500 yards west of MOTTERS.

f. The 1st Battalion, Engineers, will proceed to EMMITTSBURG and prepare for defense in that vicinity against attack on our left.

g. The signal company will lay a line from 1st Field Artillery to roadfork 500 yards west of 478 with a station at the position of the commander, 1st Brigade.

A second line will be laid from the 2d Brigade to the same roadfork.

4. The 1st Ambulance Company will follow the 1st Field Artillery to the mouth of HAMPTON VALLEY and there await further orders.

The 2d Ambulance Company will follow the 3d Brigade to the crossing of BEAVER BRANCH and there await further orders.

The 3d and 4th Ambulance Companies will park off the roads near RODDY.

The field hospitals will await orders in THURMONT.

Collecting station for slightly wounded THURMONT.

5. One wagon company artillery ammunition will proceed to mouth of HAMPTON VALLEY, the second in column to GRACEHAM.

The leading wagon company small arms ammunition just north of RODDY.

The remainder of the trains will remain where they are.

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6. Messages and reports to roadfork about 2000 yards west of MOTTERS.

A,
Major General.

Copies by aides to Generals B, C, D and E, Col. F, Maj. G, Capt. H. Extracts to commander of trains. Verbally to staff. Report by telegraph to 1st Field Army Headquarters.

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PROBLEM 10*

After an Engagement

GEOLOGICAL SURVEY MAP
EMMITSBURG THREE-INCH SHEET

Situation:

As the attack developed General A found the enemy holding the line of the fringe of timber as first reported, both his flanks bent back.

At 4 P. M. the hostile line gave way and was closely pursued by the 1st Division. The enemy's loss in falling back was very heavy; nearly 1000 prisoners were taken. By 5.30 P. M. the enemy was across the stream.

As the 1st Division was approaching the river, fresh hostile troops came into action east of the Monocacy on the high ground south of the Taneytown—Emmitsburg road and checked and forced back General A's right.

About the same time a cavalry officer reported that a hostile reinforced brigade had advanced through Taneytown at 3 P. M. and that the reason this information was so late in arriving was that the column had been efficiently screened by cavalry owing to which the Blue reconnoitering patrols in that section had had many men killed or captured, while the others had been obliged to make a wide detour to get back.

At 6.30 P. M. General A's line extended across the Emmitsburg—Taneytown road near 438, right flank well refused. The reserve brigade had practically not been engaged. General A decides that it is impracticable to force the stream tonight.

*A continuation of Problems 7-9.

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Required:

General A's dispositions and orders for the night May 17.

Solution:

1st Division,
Near Motters,
17 May 11, 6-30 P. M.

Field Orders
No. 5

1. The enemy has been decisively defeated in today's action and forced across the MONOCACY. About 1000 prisoners have been taken.

2. This division will bivouac for the night.

3 **a**. The 1st Brigade will bivouac near 494 and establish outpost from the EMMITSBURG—TANEYTOWN ROAD at 438 to the river crossing west of HARNEY, both inclusive.

b. The 3d Brigade will bivouac about FOUR POINTS and establish outposts from 438, exclusive, to MILLERS BRIDGE, inclusive.

In case of attack this outpost line will be supported.

c. The 2d Brigade will bivouac near MOTTERS and establish outpost from JIMTOWN, inclusive, to MILLERS BRIDGE, exclusive.

d. The 1st Cavalry will bivouac at FAIRPLAY and observe the line of ROCK CREEK, as far north as the BALTIMORE TURNPIKE.

e. The artillery brigade will bivouac in its present positions.

f. 1st Battalion, Engineers, will remain in EMMITSBURG.

g. The signal company will connect headquarters with the 1st and 3d Brigades and with THURMONT. The company, other than detachments, will camp just west of headquarters.

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4. The battlefield will be policed as promptly as possible under the direction of the division surgeon.

Each regiment of the 1st and 3d Brigades will detail a company to assist in this work.

A field hospital will be established in THURMONT and one in EMMITSBURG.

5. The field trains will send a day's rations to the organizations at once, the wagons then returning to THURMONT where issue will be made from the supply column to refill field trains.

Each regiment of infantry will see that ammunition in men's belts and in combat train is complete by 8-45 P. M. today. A wagon company of small arms ammunition will be at RODDY until 8-45 P. M. to make issues.

The regiment of artillery will complete the supply of ammunition with their batteries from the wagons of the ammunition column in time for the emptied wagons of the latter to assemble by 9 P. M. at THURMONT.

6. Division headquaters will remain at the roadfork 2000 yards west of MOTTERS, occupied during the day.

A,
Major General.

Dictated to officers sent from organizations to receive orders and to staff.

1st Division,
Near Motters,
17 May 11, 6-30 P. M.

To Commander of Trains:

Copy of field orders No. 5 enclosed. The trains will camp tonight about THURMONT. The emptied wagons of the supply and ammunition columns will

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be assembled at THURMONT and loaded with such wounded as are unable to march and not too seriously injured to stand this kind of transportation, and will start at 9 P. M. for FREDERICK.

Obtain such other wagons in the vicinity as you can hire or impress and assemble them at THURMONT by 8-30 to be loaded in the same way.

The prisoners, under escort of a battalion of the 4th Infantry, will follow the wagons.

X,
Chief of Staff.

By Corporal Y, mounted orderly.

Copy to Lt. Col. M. D. who was directed to see to the execution of the part referring to wounded.

1st Division,
Near Motters,
17 May 11, 7-15 P. M.

To Colonel Z:

Have the prisoners of war, able to march, at THURMONT ready to march at 9 P. M. today. A battalion 4th Infantry will report to you there at 8-45 to act as escort.

X,
Chief of Staff.

By Private G.

1st Division,
Near Motters,
17 May 11, 7-30 P. M.

To Colonel R, 4th Inf.:

Have one battalion with 8 mounted scouts report to the Provost Marshal at THURMONT at 8-45 P. M. today to escort prisoners of war to FREDERICK.

X,
Chief of Staff.

By Lt. K, Aide, to commander 2d Brigade for delivery.

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1st Division,
South of Emmitsburg,
17 May 11, 6 P. M.

Telegram to Commanding Officer,
Frederick.

Major General A directs that you forward * * * rounds shrapnel for field guns and * * * thousand rounds small arms ammunition at once.

If you have no other wagons available use those of the supply column sent back today.

Train should be on road before 8 P. M.

X,
Chief of Staff.

Note. The amount of ammunition called for in the above order is *approximately* the amount expended during the day.

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PROBLEM 11*

Before Superior Forces

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
EMMITSBURG AND KNOXLYN THREE-INCH SHEETS

Situation:

At 9 P. M. it was learned from spies and officers' patrols, that a large force, estimated at nearly a division, had reached Taneytown from Westminster about 6 P. M.

At 10 P. M. the following message was received from army headquarters:

1st Field Army,
Chambersburg,
17 May 11, 8 P. M.

General A,
Emmitsburg.

Reliable information has been received that two hostile divisions left Baltimore, one on the 11th, the other on the 12th. A third division was to have started this morning.

Our 2d Division can not reach Marshall until forenoon of 19th. The 3d Division will clear the mountains about the same time closely followed by the 4th.

Y,
Chief of Staff.

Required:

1. General A's decision and, briefly, his reasons.
2. His orders.

*A continuation of Problems 7–10.

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Solution, 1st Requirement:

General A decides to withdraw to a defensive position extending from McKee Knob northeast.

The trains and sanitary organizations to start as soon as practicable, moving by Mount St. Mary's, thence along the road west of Tom's Creek to Fairfield.

The engineer battalion to proceed by Liberty Hall School and begin preparing the position.

The 2d Brigade, the 1st Cavalry, and one battalion, field artillery, to cover the withdrawal of the other troops. The 1st and 3d Brigades not to start until the roads are clear of the trains. To withdraw by two roads.

Reasons:

General A cannot hope to defeat the two divisions now opposed to him. He can delay them and hold them back for a time. In his present position his left flank can be easily turned, which would give the enemy the position to which General A has decided to withdraw. The enemy could there interfere with the Blue Army emerging from the pass, and cut the 1st Division from the rest of the army. More Red troops will probably arrive by the night of the 18th or early on the 19th. The Blue army in order to succeed must unite.

General A of course thus gives up his original line of communications. He will have ammunition before morning, for at least two battles. Of the seven days' rations which he had on leaving Frederick, five yet remain. By the time these are gone he will be with the main army and new arrangements can be made; if victorious he will have restored his former line.

He must save all he can of his wounded; to abandon them to the enemy is apt to be demoralizing to the troops.

He cannot withdraw the fighting troops until nearly morning. Some must be left until late. If the enemy can

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be deceived as to General A's withdrawal and made to prepare to force the stream crossing so much the better.

2d Requirement, Orders:

1st Division,
17 May 11, 10-15 P. M.

To Lt. Col. M. D.:

It is necessary for this division to withdraw to a position northeast of MCKEE KNOB.

Begin at once to withdraw the wounded to FAIRFIELD, using the road east of the KNOB.

Every wounded man that can walk will be required to do so; of the others remove the least seriously wounded; leave all wounded prisoners except officers.

Leave the necessary hospital personnel with wounded left behind, utilizing civilians to the utmost.

Captains M and N and a detachment will report to you at once to assist in requisitioning wagons and in removing the wounded.

X,
Chief of Staff.

By Corporal K.

1st Division,
17 May 11, 10-20 P. M.

To Commander of Trains,
Thurmont:

It is necessary for this division to withdraw to a position northeast of MCKEE KNOB.

Have your trains ready to move as soon as practicable. You will follow the sanitary troops from THURMONT as far as MOUNT ST. MARY'S thence by road west of TOMS CREEK and park off the roads about one mile northwest of FAIRFIELD.

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A battalion of infantry will join you as escort at MOUNT ST. MARY'S. A staff officer will be sent to THURMONT and will notify you when to start.

Avoid all necessary noise.

X,
Chief of Staff.

By Sergeant L.

1st Division,
17 May 11, 10-25 P. M.

To Colonel F, 1st Cavalry,
Fairplay:

The enemy has been largely reinforced. This division will withdraw to a position northeast of MCKEE KNOB. Movement to commence at once with trains and sanitary organizations.

Have two troops report to Brigadier General C at MOTTERS by 1 A. M.

Orders will be sent you later.

X,
Chief of Staff.

By Private G, Mounted Orderly.

To Brig. Gen. D,
3d Brigade:

Detail a battalion and eight mounted scouts, as escort to the trains, to report at 543 near MOUNT ST. MARY'S by 12.30 A. M., and await trains.

Verbal message by Captain M, Aide.

1st Division,
17 May 11, 10-30 P. M.

To Major G,
Engineers:

The enemy has been heavily reinforced. This division will take up a position extending from MCKEE KNOB northeast.

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Move with your battalion as soon as practicable by LIBERTY HALL SCHOOL and begin the preparing position for defense.

Major P, G. S., will join you and lay out the line. Avoid unnecessary noise.

No bugle calls.

X,
Chief of Staff.

By Major P.

Verbally by Major General A to Brigadier General E:

The enemy has been heavily reinforced and probably has two divisions now in our immediate front.

I shall withdraw this division to a strong defensive position extending from McKee Knob northeast.

The sanitary troops and trains have been ordered to move at once. The engineer battalion will proceed at once and begin preparing the position for defense.

Have the 1st Battalion, 1st Field Artillery, and the 2d Field Artillery, and battalion of infantry now acting as escort for 1st Field Artillery, follow the engineers from Emmitsburg by Liberty Hall School to new position. A staff officer will be there to explain to you the position to be held.

The 1st Field Artillery, less 1st Battalion, will be on road from Emmitsburg to Fairplay just clear of the town by 2 A. M., subject to the orders of Brigadier General C.

Avoid unnecessary noise and prohibit all bugle calls.

1st Division,
South of Emmitsburg,
17 May 11, 11 P. M.

Field Orders
No. 6

1. The enemy has been heavily reinforced and

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now has about two divisions in and about TANEYTOWN.

Our army will arrive at MARSHALL probably on the 19th.

2. This division will take up a defensive position extending from MCKEE KNOB northeast. The movement has commenced.

The 2d Brigade, reinforced by the 1st Cavalry and 2d Battalion, 1st Field Artillery, will cover the movement.

3 **a**. General C, 2d Brigade, will relieve the infantry of his brigade on the southern line of outposts by cavalry patrols, for which purpose two troops have been ordered to report to him at MOTTERS at 1 A. M.

He will relieve the outposts of the 3d Brigade by 2 A. M., and of the 1st Brigade by 3 A. M.

The 2d Battalion, 1st Field Artillery, at northeastern outskirts of EMMITSBURG and the remainder of 1st Cavalry, headquarters at FAIRPLAY, are subject to his orders from 2 A. M.

The enemy's crossing of the river will be delayed as much as practicable without becoming too closely engaged. Vigorous reconnaissance to the east and northeast must be maintained from early dawn.

b. The 3d Brigade after its outposts are relieved will march from FOUR POINTS by EMMITSBURG and road just east of MCKEE KNOB to the designated position, halting ½ mile north of 587.

c. The 1st Brigade, after its outposts are relieved, will march by EMMITSBURG—LIBERTY HALL SCHOOL and halt northeast of 656.

d. The signal company may take up its existing lines after 2 A. M. Half the company will report to Brigadier General C; the remainder will proceed to join the 3d Brigade.

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x. Unnecessary noise will be avoided; no bugle calls will be sounded before dawn.

4. I will be at EMMITSBURG until after 5 A. M., after that at LIBERTY HALL SCHOOL.

A,
Major General.

Copies by Lt. K to Generals B, C and D, Colonel F and Captain H. Verbally to staff. Report by wire to army headquarters and to commanding officer, Frederick.

A mounted officer, either an aide or one detailed from the troops, with small escort would have been sent south on Emmitsburg road to meet the ammunition column coming from Frederick, hurry its march and guide it to Fairfield, with instructions for the commander, in case the enemy had forced a crossing before he was past, to move into the mountains and work his way around in that direction—at least to save his train.

The desired position was carefully explained to Major P and he was authorized to issue orders in the name of General A in preparing and occupying the position.

The chief of staff would follow as soon as everything was found to be moving as directed, and at 5 A. M. General A would take station at the School.

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Series C*—On the Flank of the Army

PROBLEM 12

An Advance across the Frontier

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP, FAIRFIELD QUADRANGLE

Situation:

The Franklin County boundary line, continued south along the mountains, is the boundary line between two hostile states—Blue, west, and Red, east. War has been imminent for some time, and is declared on May 31st.

On this date the 1st Blue Field Army, consisting of four divisions, is concentrated between Hagerstown and Harper's Ferry, except the 1st Division which is eight miles east of Chambersburg. It is believed that there are no large bodies of the enemy near the frontier.

On the evening of May 31st orders are issued for the advance of the Blue army on June 1st, Baltimore being the objective. The 1st Field Army, less the 1st Division, is to advance on Thurmont and Frederick. The 1st Division, under Major General A, is to advance by the Chambersburg pike on Gettysburg and from there by the Baltimore Turnpike, covering the left of the army.

Required:

1. General A's orders.
2. Sketch showing the division, exclusive of cavalry

*Army School of the Line, 1911-12, Course in Tactics—Part V, Map Problems Nos. 1 to 10.

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and patrols, when infantry point of advance guard reaches Gettysburg under supposition that no enemy has been met.*

Solution, 1st Requirement:

1st Division,
Near Chambersburg,
31 May 11, 8 P. M.

Field Orders
No. 1

1. Our army will cross the frontier tomorrow; the 1st Field Army, less this division on THURMONT and FREDERICK.

2. This division will march on GETTYSBURG and cover the left of the army.

Troops

a. Independent Cav.: Col. F, 1st Cavalry, 1 rad. sec. Sig. Co.

3 **a**. The independent cavalry will clear camp by 6 A. M. and advance on GETTYSBURG. Roads leading from that place to south and east will be reconnoitered and early communication with cavalry of main body sought.

b. Advance Guard: Brig. Gen. B, 1st Brig., 1st Bn. 1st F. A., Co. A, 1st Bn. Engrs., 1st Amb. Co., 1 rad. sec. Sig. Co.

b. The advance guard will clear camp by 6-30 A. M. and march by CHAMBERSBURG PIKE on GETTYSBURG.

c. Main Body—in order of march: 1 sec. Sig. Co., 1st Bn. 4th Inf., 1st Brig. F. A. (less 1 bn.) firing btries. only, 2d Brig. (less 1st Bn. 4th Inf.), 3d Brig., 1st Bn. Engrs. (less 1 co.), Sig. Co. A, (less dets.), F. A. C. Tns., 3 amb. cos.

c. The main body will start at 7 A. M. and follow the advance guard at about one mile.

4. The trains in the following order will follow the main body at about five miles (1) field trains (2) 1st Section supply trains (3) ammunition column (4) supply trains (less 1st Section) (5) field hospitals (6) medical reserve (7) pack train.

5. I will be at the head of the reserve of the advance guard.

A,
Major General.

*The solution of 2d Requirement is not here reproduced.—*Ed.*

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Copies to Brigadier Generals B, C, D, E, Colonel F, Major G, Captain H, by officers sent to receive orders; also to staff. Report by telegraph to field army headquarters.

Comments:

A radio section is sent forward with the cavalry and another placed with the advance guard to facilitate communication from the cavalry.

The time of starting of the main body is given as 7 A. M. and distance one mile. In thirty minutes, at two and a half miles per hour, the tail of advance guard would march more than a mile. This allows for the first halt for advance guard. The distance is *about* one mile and is bound to vary during the day.

The formation given in the sketch is for this particular case. The division is passing through a defile, into hostile territory; the formation must be adapted to these circumstances. No part of the trains must enter the defile until the exit is secure and it is known that there is not a superior enemy in our immediate front. As arranged there will be ample time to stop the trains from entering the defile if there should prove to be a superior enemy about Gettysburg.

So far as is known there is little or no danger of a serious fight today. The trains are arranged accordingly. The field trains and 1st Section of the supply will be needed in camp tonight; hence they are placed in front; the ammunition is close enough to be available in time if it should be needed.

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PROBLEM 13*

An Encounter at the Mouth of a Defile

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP, FAIRFIELD QUADRANGLE

Situation:

At 9 A. M., Colonel F, with his regiment of cavalry, encountered what he estimated to be a weak brigade of infantry with a battalion of field artillery near McKnightstown and was driven back on Cashtown followed by the enemy. He had previously met and defeated a squadron of hostile cavalry.

This information reached General A at 10 A. M. About the same time messages from officers' patrols were received stating that at 9 A. M. trains loaded with troops were beginning to arrive at Gettysburg from the east.

At 11 A. M. the head of the support of the vanguard was about at the last R in the name "Chambersburg," the head of the reserve was at the two houses west of there near the 77° 25′ meridian line on the map. The march had been delayed by a broken bridge. The bulk of the cavalry, to avoid being forced back into the defile on the division, had withdrawn to the road leading to Brady School leaving about one troop to observe the enemy and fall back through Cashtown.

At this time the leading elements of the column were fired into and hasty reconnaissance and the report of the cavalry troop indicated that the enemy was taking position extending from the fork in the country road, near the word "Marsh" on the map, south to the wooded hill, thence

*A continuation of Problem 12.

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skirting this on the northwest to about 100 yards north of roadfork 1112, thence west across the little valley.

General A is with the advance guard commander in rear of the support.

Required:

1. General A's decision and orders.
2. The advance guard commander's order.

Solution, 1st Requirement:

General A decides to attack promptly and clear the mouth of the defile, making a turning movement by way of Brady School.

The cavalry to hold an outlet for the turning movement. The advance guard (less 3d Infantry), reinforced by the 6th Infantry, to attack in front.

The 3d Infantry to turn northeast at roadfork 1334 and march by the Brady School to join the cavalry.

The leading two battalions of field artillery from the main body to increase the gait and follow the 3d Infantry; the 4th Infantry and 5th Infantry and Company B, Engineers, to follow the artillery; Brigadier General C to command the force making the turning movement.

3d Brigade, the remaining battalion of field artillery and the 1st Battalion Engineers (less 2 cos.) to constitute the reserve.

To have the trains await instructions where they are.

General A verbally to Brigadier General B:

> You will attack the force in our front. The 3d Infantry will be detached from you, but the 6th will report to you as soon as it comes up. A force will be sent by Brady School to turn the enemy's position. The reserve will be held at crossroads a mile and a half back.

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1st Division,
On Chambersburg Road,
1 June 11, 11-15 A. M.

To Colonel Q, 3d Infantry:

Enemy in our front holds mouth of defile. General A proposes to attack in front and make a turning movement by Brady School. Our cavalry holds eastern end of latter road.

The General directs that you leave this road at 1334 and march by Brady School to join the cavalry; you will be followed by 6 batteries field artillery and 2 regiments of infantry. Push the march as advance guard of turning movement.

Brigadier General C will be placed in command of the turning movement.

X,
Chief of Staff.

Sent by Captain M, Aide.

1st Division,
Chambersburg Road,
1 June 11, 11-20 A. M.

To Colonel F:

Hold your position. You will be heavily reinforced.

X,
Chief of Staff.

By wireless; if not acknowledged, by mounted orderly.

In the meantime the complete order was being prepared and is as follows:

1st Division,
On Chambersburg Road, near Newman School,
1 June 11, 11-25 A. M.

Field Orders
No. 2

1. A force of the enemy estimated as a weak

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brigade of infantry and a battalion of field artillery has taken a position across this road about 3 miles to our front. His cavalry, one squadron, was defeated by our cavalry earlier in the day.

2. This division will attack in front and turn the enemy's right.

3 **a**. Brigadier General B, with the 1st, 2d and 6th, Regiments of Infantry, 1st Battalion, 1st F. A., Company A, 1st Battalion Engineers, Troop A, 1st Cavalry, and 1st Ambulance Company, will attack along the CHAMBERSBURG PIKE. The attack will begin at once.

b. Brigadier General C, with the 3d, 4th and 5th Regiments of Infantry, 2d Battalion, 1st F. A., 1st Battalion, 2d F. A., Company B, 1st Battalion Engineers, and 2d Ambulance Company, will move by the BRADY SCHOOL and turn the enemy's right.

c. The 1st Cavalry, Colonel F, will hold a position covering the junction of the BRADY SCHOOL road with the road to ARENDTSVILLE until the arrival of General C, after which Colonel F will be subject to the orders of General C.

d. The 3d Brigade, 2d Battalion, 2d F. A., Company C, Engineers, will constitute the general reserve under my orders and will take station for the present at the NEWMAN SCHOOL.

e. The signal company will connect the position of the reserve with Brigadier General C.

4. The 3d and 4th Ambulance Companies will join the reserve.

The trains will remain west of t e pass except one field hospital which will be sent forward to join the reserve.

5. I will be with the reserve.

A,
Major General.

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Copies to Brigadier Generals B, C, D, E, Colonels 3d and 6th Infantry, Colonel F, Major G, Captain H. Verbally to staff. Extract to commander of trains.

General C would have been ordered to ride ahead of his brigade and report to General A at the crossroads and informed of the orders given to the cavalry and 3d Infantry in order that he might direct the further movements of his command without loss of time.

Breaking two brigades this way is generally inadvisable but this is no time to delay in order to avoid it.

2d Requirement:

General B, having assembled the commanders of the 1st and 2d Regiments of Infantry, the battalion of field artillery, engineer company, and staff, issued the following verbal order:

> A hostile force of less than a brigade of infantry, reinforced by a battalion of field artillery, has taken up a position across our road extending from the woods north of that knoll (pointing) south to the north side of that knoll, then skirting the edge of the timber to the southwest for about a quarter of a mile, then turning west across a small secondary valley through which a road from the south joins this road.
>
> General C, in command of 3 regiments of infantry, a regiment of field artillery and the cavalry, is making a turning movement to the north.
>
> The divisional reserve will be at the Newman School.
>
> This command will attack at once the position in our front.
>
> The artillery will take position near roadfork 1404 north of this road and support the attack.
>
> The 1st Infantry will attack with its right across this road.

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The 2d Infantry will attack with its left about fifty yards to the right of this road.

The 6th Infantry and engineer company will constitute the reserve and take station south of this road opposite the roadfork there (pointing).

Troop A, 1st Cavalry, except the patrols in the mountains to the south, will await orders at the reserve.

The ambulance company will await orders in the position of the reserve.

I will be near the reserve. Commence the attack.

(Repeated to the colonel, 6th Infantry, when he arrives.)

Note: The road taken by the turning movement ends very close to the enemy's position, so close that it is bound to be observed by him. But General A's cavalry can hold the outlet unless a large part of the present hostile force is detached against it and with the force the enemy now has he cannot afford this. Hostile reinforcements are undoubtedly approaching; if possible General A wants to get out of the defile before they arrive; if that is not possible, to be in the best position to get out. His front would be too narrow if he limited himself to a frontal attack. After sending away General C's command he still has left more men than he can utilize on his limited front.

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PROBLEM 14*

As the Enemy Retreats

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
ARENDTSVILLE, KNOXLYN AND GETTYSBURG THREE-INCH SHEETS

Situation:

By 3.30 P. M. the Blues had succeeded in carrying the hostile position, the enemy retreating on Gettysburg in great disorder. The flank attack from the north had contributed materially to the success.

On the Blue side the 1st Brigade had suffered heavy loss and was mixed and disorganized. The 4th Infantry had also suffered considerable loss, the 5th somewhat less; all five regiments had been severely engaged. The remaining infantry regiments had not been engaged.

It was estimated, from all data obtainable, that there were four regiments of hostile infantry engaged, two of which had arrived after the fight had begun. Only one battalion of Red field artillery had been engaged, but another was known to have started from Gettysburg about 3 P. M. Only one squadron of hostile cavalry has as yet arrived at Gettysburg.

Information was also received that there were two more regiments of infantry in Gettysburg or leaving there to join the force at the front. From the prisoners it was learned that a division was being moved to Gettysburg by the W. M. R. R., from the east, the last of the troops to arrive not being due until sometime tomorrow.

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*A continuation of Problems 12–13.

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Required:

1. General A's orders given at this time.

2. General A's further orders until nightfall, assuming that the enemy continues his retreat to Gettysburg without offering further serious resistance.

Note: The W. M. R. R. from the west is intact as far east as Orrtanna and connects with a depot of supplies in the Cumberland Valley.

Solution, 1st Requirement:

Assoon as success was certain General A would have ordered the trains to resume the march and directed that supplies and ammunition be sent forward by rail to Orrtanna, also empty cars for the wounded.

1st Division,
Near Cashtown,
1 June 11, 3-40 P. M.

Field Orders
No. 3

1. The enemy has been defeated and is retreating in disorder on GETTYSBURG.

2. The pursuit will be taken up at once.

3. The 3d Brigade, reinforced by the 6th Infantry, 2d Field Artillery, and 1st Squadron, 1st Cavalry, under command of Brigadier General D, will advance at once and drive the enemy into or beyond GETTYSBURG and seize and hold MCPHERSON RIDGE.

4. The 1st Cavalry (less 1st Squadron) will move by the north of GETTYSBURG and seek to interrupt the W. M. R. R. and reconnoiter toward the east.

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5. The 2d Brigade (less 6th Infantry) will be reformed and at 4-30 P. M. will follow the 3d Brigade toward GETTYSBURG.

Two companies from this brigade will be detailed to report to Division Surgeon to assist in policing the field.

6. The 1st Field Artillery will follow the 2d Brigade. This regiment will detail an officer and 30 men to report to Division Surgeon to police the field.

7. The 1st Brigade will follow the 1st Field Artillery. This brigade will detail two companies to report to Division Surgeon to assist in policing the field.

8. The 1st Battalion Engineers will report to Division Surgeon.

9. The Division Surgeon will have charge of the police of the field.

A field hospital will be established at CASHTOWN. Evacuation of wounded through ORRTANNA where cars will be available by 5 P. M.

10. I will start for SEVEN STARS at 5 P. M.

A,
Major General.

Copies to brigade commanders, Lt. Col. M. D., Col. F. Major G and Capt. H.

As the result of the fight became apparent, the staff would have begun preparing the order so that there would have been no loss of time.

At 7 P. M., General D's command being in possession of McPherson Ridge, the other troops with head at Seven Stars, the trains approaching Cashtown, General A issued the following order:

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1st Division,
Seven Stars,
1 June 11, 7 P. M.

Field Orders
No. 4

1. The enemy, estimated at four regiments of infantry, one of field artillery and a squadron of cavalry, has retreated into and beyond GETTYSBURG.

2. This command will bivouac for the night.

3. The 3d Brigade, reinforced by the 2d Battalion, 2d Field Artillery, and 1st Squadron, 1st Cavalry, will form the outpost with line of resistance along MCPHERSON RIDGE, observing from BOYD SCHOOL to LITTLE ROUND TOP.

In case of attack MCPHERSON RIDGE will be held.

4. The main body will go into bivouac as follows:

1st Brigade north of CHAMBERSBURG ROAD near SEVEN STARS; 2d Brigade, south of CHAMBERSBURG ROAD opposite 1st Brigade.

Artillery brigade (less 1 bn.), at crossroads 612 south of CHAMBERSBURG ROAD.

Engineer battalion, north of the artillery brigade.

Company A, Signal Corps, in western edge of SEVEN STARS and connecting that place with outpost commanders.

Sanitary troops, after completion of their present work, at CASHTOWN.

Field trains will join their commands.

One wagon company artillery ammunition to artillery camp and one of small arms ammunition to SEVEN STARS.

Remainder of trains at CASHTOWN.

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5. Subsistence tonight from haversacks. Issues will be made at ORRTANNA at 4 A. M., tomorrow.

Ammunition will be drawn by infantry combat trains at SEVEN STARS at 9 P. M.

6. Division headquarters in SEVEN STARS.

A,
Major General.

Copies to officers sent to receive orders.

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PROBLEM 15*

As the Enemy Continues His Retreat

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

General A's division bivouacked for the night as ordered.

The enemy held the town of Gettysburg with a detachment, his general outpost line being east of Rock Creek. No hostile movement was made during the night. The cavalry succeeded in interrupting the railroad near Guldens. Colonel F bivouacked with his command west of Hunterstown.

A telegram from 1st Field Army headquarters stated that the heads of columns had reached Thurmont and Middletown that day and had met but little opposition. The cavalry reported large hostile forces near Parr's Ridge and the Monocacy.

The W. M. R. R. between Orrtanna and Gettysburg was found to be thoroughly wrecked.

By 6 A. M. the police of the battlefield and the evacuation of the wounded were about completed.

General A had decided to attack the enemy about 10 A. M., and was completing his preparations for attack when, at 9.30 A. M., he learned from his cavalry that the enemy was retreating toward New Oxford. About the same time it was discovered that the hostile outpost line had been withdrawn.

Required:

1. General A's orders.
2. His reasons.

*A continuation of Problems 12–14.

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Solution, 1st Requirement:

1st Division,
Near Gettysburg,
2 June 11, 9-45 A. M.

Field Orders
No. 5

Troops

a. Advance Guard:
Brig. Gen. D
3d Brig.
2d Bn. 2d F. A.
1st Sq. 1st Cav.
Co. A, Bn. Engrs.
1 sec. Sig. Co.
1st Amb. Co.

b. Main Body—in order of march:
1st Bn. 4th Inf.
1st F. A.
2d Brig. (less 6th Inf. and 1 bn. 4th Inf.)
1st Brig.
1st Bn. Engrs. (less 1 co.)
Sig. Co. A, (less 2 secs.)
3 amb. cos.

c. Left Flank Detachment:
Brig. Gen. C
1st Cav. (less 1st Sq.)
6th Inf.
1st Bn. 2d F. A.
1 sec. Sig. Co.

1. The enemy in our front is retreating toward NEW OXFORD.

The heads of columns of the 1st Field Army reached THURMONT and MIDDLETOWN yesterday with little opposition, but heavy forces are reported in their front at PARRS RIDGE and the MONOCACY.

2. This command will continue its advance towards LITTLESTOWN.

3 **a**. The advance guard will start at 10-15 A. M., marching from KATALYSINE SPRINGS on the road south of CHAMBERSBURG ROAD then by BALTIMORE TURNPIKE on LITTLESTOWN.

b. The main body will start from SEVEN STARS at 10-15 A. M. and follow the advance guard.

c. The left flank detachment, except the cavalry, will start from SEVEN STARS at 10 A. M. and will march by GETTYSBURG and YORK PIKE to GULDENS. It will have right of way over all other troops until clear of GETTYSBURG. The cavalry will closely press the retreating enemy and will be supported by the remainder of the detachment. The infantry and artillery will not pursue farther than GULDENS; they will march from there by LOW DUTCH ROAD to join the main command.

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4. The field trains will assemble with head at SEVEN STARS as soon as the main body has cleared that point and will follow at a distance of one mile.

The remaining trains in the following order will follow the field trains at one mile: one wagon company, artillery ammunition; one wagon company, small arms ammunition; one section supply train; field hospitals; remainder ammunition column; remainder supply column; medical reserve; and pack train.

5. I will be with reserve of the advance guard.

A,
Major General.

Copies to officers sent to receive orders.

2d Requirement, Reasons:

The report from army headquarters indicates that there will be a serious engagement very soon between the main armies. General A's mision is to cover the left flank of our army but in addition to that he must as far as possible be in condition to help in the main fight. To follow the defeated Red force would tend further to demoralize it and would increase its losses but it might result in this weaker force keeping General A's division out of the main battle. It is therefore better to move toward the main battle, sending only enough in pursuit of the enemy in his immediate front to make sure that he keeps moving and believes himself followed. The cavalry and artillery will doubtless do the work but should nevertheless be supported. The 6th Infantry is assigned this task; it was not in the fight yesterday nor on outpost last night.

While General A's command had a very hard day yesterday still a short march today should be made to clear the hills about Gettysburg and to get nearer the main army.

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In the order it is important to give the right of way to the flank detachment and to send the advance guard by some other road than the Chambersburg Road to prevent confusion of columns and prevent delay to the pursuing forces.

The trains are close but this is believed allowable as the enemy is retreating and is probably demoralized.

It is assumed that the necessary ammunition and supplies were at Orrtanna to refill the trains and that the required refilling has been accomplished.

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PROBLEM 16*

After the Pursuit

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP

Situation:

At 2 P. M., as the advance guard of the division was crossing White Run, General A decided to halt for the night in the vicinity.

Reports from Brigadier General C are to the effect that the enemy is continuing his retreat in some disorder and offering no resistance.

Required:

1. General A's halt order.
2. The march order for the next day assuming that nothing new has developed.

Solution, 1st Requirement:

1st Division,
On Baltimore Turnpike, near White Run,
2 June 11, 2-15 P. M.

Field Orders
No. 6

1. The enemy has continued the retreat in some disorder offering no resistance to our pursuing force.

2. This command will halt for the night.

3 **a.** The advance guard will camp north of TWO TAVERNS and establish an outpost line observing from

*A continuation of Problems 12–15.

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BONEAUVILLE through GERMANTOWN to crossroads 568. In case of attack the outpost will be supported.

b. The 1st Brigade will camp between the two branches of the WHITE RUN north of this road.

The 2d Brigade will camp west of LOW DUTCH ROAD and north of this road. It will detail a detached post to observe crossroads 530 west of MT. VERNON SCHOOL.

The artillery brigade (less 1 battalion) will camp along the road north of this and running along western branch of WHITE RUN.

The 1st Cavalry (less 1 squadron) will camp south of this road between ROCK CREEK and WHITE RUN.

The engineer battalion will camp south of this road and east of WHITE RUN.

The ambulance companies will camp south of this road and west of WHITE RUN.

The signal company will camp where this road crosses ROCK CREEK. A wire will be laid from there to the outpost commander with a station at 489.

4. The field trains will join their commands.

The remaining trains will park on the "BATTLEFIELD."

5. Issues will be made from the supply column at 5-30 P. M., at 523.

The emptied supply wagons will proceed to ORRTANNA tonight and refill and rejoin early tomorrow.

6. Division headquarters will be at the farm house just west of where this road crosses ROCK CREEK, where orders will be issued at 9 P. M.

A,
Major General.

Copies to officers sent from commands to receive them.

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1st Division,
2 Miles Southeast of Gettysburg,
2 June 11, 9 P. M.

Field Orders
No. 7

1. Nothing new has been heard of the enemy.

2. We will continue our march on WESTMINSTER.

Troops

a. Independent Cav.:
Col. F
1st Cav.
1 sec. Sig. Co.

3 **a.** The independent cavalry will leave camp by 5-30 A. M. and cover the march. The roads leading to the north and east from the BALTIMORE PIKE will be carefully observed.

b. Advance Guard:
Brig. Gen. D
3d Brig.
2d Bn. 2d F. A.
Co. A. Bn. Engrs.
1 sec. Sig. Co.
1 amb. co.

b. The advance guard will clear TWO TAVERNS by 7 A. M. and march by the BALTIMORE PIKE on WESTMINSTER.

c. Main Body—in order of march:
1st Bn. 4th Inf.
F. A. Brig. (less 1 bn.) firing btries. only
2d Brig. (less 1 bn.)
1st Brig.
Bn. Engrs. (less 1 co.)
3 amb. cos.

c. The head of the main body will start from the intersection of the LOW DUTCH ROAD and BALTIMORE PIKE at 6-50 A. M. and follow the advance guard at about 1 mile.

4. The trains will be formed in two sections. 1st Section: 1 wagon company, artillery ammunition; 1 wagon company, small arms ammunition. The remainder will constitute the 2d Section.

The 1st Section will follow the main body at 1 mile, the 2d Section will follow the first at 3 miles.

5. Messages to reserve of the advance guard.

A,
Major General.

Copies to officers sent to receive orders.

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PROBLEM 17*

On the Approach of Fresh Hostile Forces

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP

Situation:

During the night of June 2 / 3 the following information was received from army headquarters:

> The enemy has developed considerable strength today. He is holding the line of the Monocacy from Walkersville south with advanced troops; the enemy's main force seems to be concentrating about Mt. Airy.
>
> We will attack the line of the Monocacy early tomorrow, June 3d.
>
> Information received at these headquarters indicates that there was a considerable force of the enemy about Hanover the night of June 1st.

At 7.30 A. M., as the advance party is at Littlestown and the head of main body near Two Taverns, a report from the cavalry is received stating that a hostile division was advancing toward Littlestown by the Mt. Pleasant road At 7 A. M. the leading element was about one mile east of Mt. Pleasant. Another hostile brigade of infantry was reported breaking camp at Edgegrove at about the same time.

The main body of the 1st Cavalry was delaying the force first mentioned as far as practicable without becoming too closely engaged. Colonel F reported that as far as developed

*A continuation of Problems 12–16

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the enemy had less than a regiment of cavalry; probably about two squadrons.

Required:

1. General A's plan and, briefly, his reasons.
2. His orders.

Solution, 1st Requirement, Plan:

Reinforce the advance guard with another battalion of field artillery and have it take up a position near Littlestown to cover the movement of the main body. The 1st Cavalry to be under General D's command. The main body to turn south at Two Taverns and march on Taneytown.

The trains, combined in one section, to march by the Taneytown Road.

Reasons: General A is confronted by a decidedly superior force. A fight might result not only in his defeat but in his being forced back toward Gettysburg, leaving this superior hostile force between him and the main army. The reverse is what the situation demands if it can be accomplished.

2d Requirement, Orders:

After General A issued his march order for the 3d, the information from army headquarters was received. This called for no change in his march order, but General A promptly communicated the information to the brigade commanders, Colonel F, and the staff.

On receipt of the information of the enemy at 7.30 A. M., General A, if not with General D, would promptly join him and would give him the following verbal order after showing him the message from the cavalry:

> General: you will be reinforced with another battalion of field artillery. Take up a position near

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Littlestown, check the enemy and cover the march to the south of the main body.

The main body will turn south at Two Taverns and march on Taneytown. Trains by road west of that.

Complete order will be furnished you later.

An aide, Captain M, was sent to the head of the main body with instructions to find Brigadier General C and direct him to assume temporary command of the main body, to send the 1st Battalion, 2d Field Artillery, 2d Ambulance Company and another section, signal company, to report at once to General D, and then march the column south from Two Taverns by 428—528 to Taneytown.

Captain M was then to proceed to the trains, explain the plan of operations to the commander of the trains and direct him to send the two wagon companies of ammunition at the head of the column, direct to Littlestown to report to General D, and to start at once and march the remainder of the trains in one closed section by the Taneytown Road to Taneytown.

In the mean time the complete order was being prepared and was as follows:

1st Division,
Germantown,
3 June 11, 8-10 A. M.

Field Orders
No. 8

1. A large hostile force of all arms is reported advancing toward LITTLESTOWN by way of MT. PLEASANT. A smaller hostile force is at EDGEGROVE.

The enemy's main army is about MT. AIRY and on the MONOCACY west of that place. Our army will attack today.

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2. This division will change the direction of its march and move on TANEYTOWN and interpose between the hostile force in our front and the left flank of our army.

3. The 1st Cavalry is hereby placed under the orders of Brigadier General D.

The advance guard will take up a position near LITTLESTOWN, cover the march of the remainder of the division and later follow as rear guard.

The 1st Battalion, 2d Field Artillery, 2d Ambulance Company, and a section of Company A, Signal Corps, from the main body, will advance at once to LITTLESTOWN and report to Brigadier General D.

Brigadier General C will assume command of the main body, turn south a little east of TWO TAVERNS and march on TANEYTOWN.

4. The two wagon companies of ammunition ordered to march in the 1st Section of trains will be sent to LITTLESTOWN at once to report to Brigadier General D.

The remainder of the trains will march by the TANEYTOWN ROAD on TANEYTOWN.

5. I will be at LITTLESTOWN until further notice.

A,
Major General.

Copies to brigade commanders, Colonel F, commander of trains, and staff.

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PROBLEM 18*

After the Enemy's Pursuit has Ceased

GEOLOGICAL SURVEY MAP

Situation:

On June 3, General A marched the main column of his division to Taneytown without incident.

The reinforced 3d Brigade held its position at Littlestown until 2 P. M. at which time it began its retreat on Taneytown, fighting a delaying action as far as the Piney Creek crossing on the road. Here the pursuit stopped for the night.

General D's success was largely due to his well selected position and the errors of the enemy.

The enemy's losses were heavy owing to the fact that his first move was an attempt to rush the position of General D without proper reconnaissance or formations. This resulted in his repulse with heavy loss. After more than an hour the attack was resumed in proper formation and General D was promptly forced to retreat.

General D fell back fighting a delaying action. At 4 P. M. the enemy ceased the pursuit with his advance just north of Piney Creek. General D halted in position just south of that place.

Required:

General A's orders and dispositions for the night of June 3/4.

*A continuation of Problems 12–17.

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Solution:

As the main body arrived near Taneytown the troops were massed near and north of the village and allowed to stack arms and get their dinner. They were in this position until after 4 P. M.

The trains as they arrived were directed to await orders near Bruceville south of Pipe Creek.

At 4.30 P. M. General A issued the following order:

1st Division,
Taneytown,
3 June 11, 4-30 P. M.

Field Orders
No. 9

1. The hostile force from the northeast in its attack on our 3d Brigade was at first repulsed with heavy loss but later, by weight of numbers, compelled General D's command to withdraw. The withdrawal was made in good order, General D fighting a delaying action until PINEY CREEK crossing was reached where the enemy halted.

2. The 2d Brigade, reinforced by two troops 1st Cavalry and one battalion 1st Field Artillery, will camp near 469 and establish outpost on the line LONGVILLE—GALT—MARKERS MILL. A cavalry detached post at PALMER.

3. The 1st Brigade will camp northwest of road-fork 551 southeast of TANEYTOWN.

The 3d Brigade, as soon as the outpost is established, will withdraw and camp on the south side of TANEYTOWN along road leading to BRUCEVILLE.

The artillery brigade north of 561.

1st Cavalry (less two troops) on western edge of TANEYTOWN. To remain in touch with the enemy until dusk.

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Engineer battalion west of road to COPPERVILLE near where farm road turns west.

Signal company on eastern edge of this town along road to STUMPTOWN. It will maintain a line to commander of outpost.

Ambulance companies near 528.

4. The field trains may join their commands but will be ready to march at 3 A. M. tomorrow.

The remainder of the trains will camp south of LITTLE PIPE CREEK.

5. Issues will be made at south edge of town at 6 P. M.

6. Division headquarters at PARK HOTEL, TANEYTOWN, where orders will be issued at 10 P. M.

A,
Major General.

Copies to officers sent from organizations for orders.

Note: One section supply train would make the issue tonight.

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PROBLEM 19*

As a Containing Force

GEOLOGICAL SURVEY MAP

Situation:

At 8 P. M. the cavalry reported that the enemy had bivouacked along Piney Creek between Kingsdale and Piney Creek village.

About 9.30 P. M. a message was received from army headquarters that the Monocacy had been crossed that morning without serious resistance and the enemy developed in force about Mt. Airy. The first great battle of the war was expected to be begun tomorrow morning. General A was directed:

> Maneuver your division so as to hold the Littlestown force off the flank of the main army and out of the fight if possible. If unable to hold the enemy confronting you out of the fight be sure promptly to join the main army as the Blue superiority in strength is now very slight. Frederick is advance depot of 1st Blue Army. The railroad is reported in working order to Woodsboro.

Required:

1. General A's orders for June 4.
2. Briefly, his reasons.

*A continuation of Problems 12–18.

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Solution, 1st Requirement:

1st Division,
Taneytown,
3 June 11, 10 P. M.

Field Orders
No. 10

1. The enemy in our front has camped along PINEY CREEK from the village of that name north.

Our army today crossed the MONOCACY without serious resistance and tomorrow will attack the enemy's main force which is about MT. AIRY.

2. This division is charged with the duty of keeping the hostile force in our immediate front out of the main battle. We will accordingly take position in readiness behind PIPE CREEK.

3 **a**. The outpost, reinforced by the remainder of the 1st Cavary, will cover the withdrawal of the division to its new position, and then withdraw to KEYMAR by the road through BRUCEVILLE. General C will be notified when to begin his withdrawal. The cavalry will move out at 4 A. M. and gain contact with the enemy.

b. The artillery brigade (less one battalion) will start at 4 A. M. and move by OTTERDALE MILL to MT. UNION CHURCH.

c. The 1st Brigade will start at 4 A. M. and march to the vicinity of small woods about 1100 yards south of TREVANION.

d. The 3d Brigade will start at 4 A. M. and march to KEYMAR.

e. The engineer battalion will start at 4 A. M. and march to MIDDLEBURG, thence to points designated by the chief of staff to assist in the intrenching.

f. The signal company will follow the 3d Brigade. On reaching KEYMAR it will connect that place with

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the station of the 1st Brigade, cutting in a station for the artillery brigade and will maintain the line to the outpost until it is withdrawn.

x. Staff officers will accompany the two infantry brigades and designate points to be intrenched.

4. The field trains will start at 3 A. M. and, following the routes prescribed for the respective units, will cross BIG PIPE CREEK and assemble north of WOODSBORO.

The remaining columns will start at 4 A. M., the ammunition columns and two field hospitals halting at LADIESBURG, the remainder at WOODSBORO.

5. I will be at TANEYTOWN until the withdrawal of the outpost.

A,
Major General.

Copies to officers sent to receive orders.

Note: As soon as the road was clear for the outpost troops General C would be notified to begin his withdrawal, probably about 4.20 A. M.

2d Requirement, Reasons:

The enemy will undoubtedly endeavor not to go east of Westminster as the country is very hilly and a march in that direction would not bring him to the position in the main fight he must desire. The enemy is much stronger than General A and must therefore endeavor promptly to drive him out of the way if possible so that he can join in the main fight and keep General A out of it.

General A's present position is not particularly strong; the bluffs south of Pipe Creek afford a strong position but it is too extensive for one division. From its eastern end the position chosen covers the roads to Westminster and

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Uniontown; its western end covers the roads to Woodsboro and Libertytown. There are good roads in the position by which the troops can be moved to the threatened points if the enemy attacks, or, if he attempts to turn the position and march around, by which he can be flanked.

The command is camped so as to allow of prompt and easy withdrawal by several roads to the new position. The withdrawal of the outpost will not mask the fire of the troops in position and the latter, by artillery fire, can cover the withdrawal of the outpost. The troops were assigned camps about Taneytown with this end in view in case it should be found desirable later to cross Pipe Creek.

General A could have crossed Pipe Creek the night before and camped in his new position. There were several reasons for not doing so. If the enemy had continued to press him vigorously and had not been so long delayed, so that General A would have had to fight a battle with his whole force on June 3, General A would have done so south of Pipe Creek. But with the roads available it was safe to camp where he did, under the circumstances, until he knew the conditions with the main army and what was to be his next play.

Had General A fallen back behind Pipe Creek on the night of June 3, the enemy could have reconnoitered it during the night and launched his attack early on the 4th; as it is he has been kept in the dark as to General A's move and will lose much valuable time in reconnoitering. A timid commander or one lacking confidence in himself or with poor undisciplined troops probably would have done better to have crossed Pipe Creek on June 3.

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PROBLEM 20*

Occupying a Defensive Position

GEOLOGICAL SURVEY MAP

Situation:

Before 8 A. M. the 1st Division, except the cavalry, was across Pipe Creek as ordered.

By 9 A. M. the enemy was closed up at Taneytown.

At 9.30 A. M. columns were seen advancing on the Bruceville, Middleburg and Trevanion roads.

Required:

1. The dispositions of the 1st Division at 9 A. M.
2. Any changes made after this hour up to 10 A. M.

Solution, 1st Requirement, Dispositions at 9 A. M.:

Artillery Brigade: 1st Battalion, 1st Field Artillery, about ¾ of a mile west of Keymar in readiness; positions and firing data prepared to cover arc from the Monocacy northeast to range of guns.

2d Battalion, 1st Field Artillery, near Fairview School; positions and firing data prepared to cover arc from northwest to northeast to range of guns.

2d Field Artillery, a few hundred yards north of Middleburg; positions and firing data as above; battalions separated. All four battalions, however, connected by wire laid by signal company.

*A continuation of Problems 12–19.

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1st Brigade, near the position to which it was ordered with trenches prepared facing north, northeast and northwest. A right flank detachment of one battalion, machine gun platoon and 20 scouts, southeast of Oregon School.

The 2d Battalion, 1st Field Artillery, has been placed under the command of General B.

The 2d Brigade in reserve near group of houses southeast of Middleburg, near farm road, with one battalion and machine gun platoon and 6 scouts strongly intrenched near mouth of loop in Big Pipe Creek and about 1½ miles north of brigade, far enough down the north slope to be safe from fire of 2d Field Artillery. This position cannot be selected very definitely from map, owing to trees. It will cover the artillery and road and flank an attack toward Keymar.

One battalion with machine gun platoon and 6 scouts will be sent to intrench on the south side of Double Pipe Creek and west of Detour, to observe to the Monocacy and flank an attack against the 3d Brigade.

3d Brigade near Keymar with intrenched line prepared along bluff from west of road near Bruceville to east of Taneytown—Middleburg road; the line one with gaps.

Engineer battalion: entrenching near 446 south of Otterdale Mill.

Cavalry north of Pipe Creek confronting the advancing columns.

Signal company has lines laid from 1st Brigade along main road to 1st Battalion, 1st Field Artillery, with stations for 2d Battalion, 1st Field Artillery, 2d Field Artillery, 2d and 3d Brigades, and division headquarters.

Ambulance companies: one at roadfork 586 south of Fairview School. One south of Keymar at the crossing of Little Pipe Creek. Two at roadfork 477 southeast of Middleburg.

Trains where they were ordered to march.

Division headquarters at Mt. Union Church.

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Infantry in readiness to occupy positions. Artillery in readiness.

2d Requirement, Changes up to 10 A. M.:

Information is given to detachment commanders of the enemy's lines of approach and orders to stop the enemy in their front.

Twenty mounted scouts under an officer are detailed from the 3d Brigade to observe the line of the Monocacy from Millers Bridge to opposite Woodsboro.

As the cavalry fell back it would operate on the right observing the line of Big Pipe Creek as far as Union Mills sending strong patrols west of the Monocacy to observe as far north as Bridgeport. The main body would keep up constant reconnaissance on the enemy's left.

As the two opposing cavalrys have now been in contact for some time, Colonel F would know how much cavalry the enemy had and its aggressiveness and quality. On his advice the distribution would be made. If all were not needed for the work laid out above the remainder would be concentrated near division headquarters as a very mobile reserve to reinforce parts of General A's exceedingly long line.

General A proposes to delay the enemy as long as possible, to make sure of his retreat, if it becomes necessary, by more than one road to the main army, delaying the enemy to the utmost; in case the enemy turns to the east by a nearby route, to strike him in flank. Should the enemy make a wide detour to the east ,General A will merely observe him and hasten to join his main army; he should be able to accomplish this long before the enemy could join his main army by a wide detour.

General A has no fear that the enemy will make a turning movement to the west.

This is one of the exceptional cases where such a dispersion of a division would be justified.

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PROBLEM 21*

Policing the Battlefield

GEOLOGICAL SURVEY MAP

Situation:

The enemy's main attack was made at Bruceville with a secondary attack at Trevanion. The secondary attack was unsuccessful and ceased at 2 P. M., the enemy continuing to observe the line. The main attack continued until sundown but the enemy failed to carry the position.

At this time the attack ceased, both lines holding their ground.

Required:

1. Location of sanitary units during the battle and at its close.
2. Orders and dispositions for policing the field.

Solution, 1st Requirement:

Under the terms of the present problem, the enemy's main attack was delivered at Bruceville, with a secondary attack at Trevanion. The secondary attack was unsuccessful and ceased at 2 P. M., the enemy continuing to observe the line. The main attack continued until sundown but the enemy failed to carry the position. At sunset, the attack ceased; both sides holding their ground.

No mention is made of the time the attack began but, judging from the situation given for the Blues in the pre-

*Continuation of Problem 20.

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ceding problem at 9 A. M., it is probable that the fighting did not begin until two or three hours later.

The secondary attack, which ceased at 2 P. M., therefore probably lasted but a couple of hours. "Secondary attacks" are not pushed with maximum vigor and the losses are usually relatively smaller. In this case, moreover, the duration of this secondary action was much shorter. Also only one brigade was engaged, and probably the brigade reserve did not come into action. For these reasons the Blue losses near Trevanion may be assumed as not to have exceeded 20 per cent of the total.

The total losses, of which no figures are given, must have been severe, from the duration and nature of the fight as a whole. Probably 70 per cent of such total occurred in the infantry engaged near Keymar.

Perhaps the remaining 10 per cent occurred in the artillery (fairly proportionately distributed) and in the cavalry. Many cavalry wounded falling north of Pipe Creek undoubtedly had to be left to the enemy and, after the cavalry was driven in, its later position is not given. Cavalry losses may thus be disregarded.

It thus appears that sanitary activity will be largely centered within about a mile of Keymar.

The 1st Requirement calls for the "location of the sanitary units during the battle and at its close."

These positions will have varied with the battle situation. It is therefore necessary to fix definite periods of time for consideration. One such convenient period (Period A) is about 3 P. M., when the action at Trevanion has been over about an hour, while the action near Keymar is only half over and very severe. At this time the issue of the action as a whole is undecided. Another such period (Period B) is just after sunset, when the general engagement ceases—though with a final result not entirely free from doubt—and it is evident that some hours, at least, are available

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in which the sanitary service may work relatively undisturbed by any tactical necessity.

The problem does not set any time limit in which the sanitary work must be concluded. It may be assumed that the entire night, at least, is thus available for such work. However, to guard against any contingency, it will be expedited as much as possible.

In Period A, Ambulance Company No. 1, less all wheel transport, will have moved up and established a dressing station in the rear of the line of the 1st Brigade. As the exact position occupied by this deployed brigade is not stated, the exact position of the dressing station cannot be given; however, it might very likely be in the little woods south of Trevanion. As the ambulance company moved forward, it would probably halt briefly at the position of the 2d Battalion, 1st Field Artillery, and attend to any wounded there. The wheel transport is not brought forward at this time as the roads appear to be considerably exposed, and that direct to Fairview School is particularly dangerous by reason of the proximity of the artillery position The wheel transport therefore remains at the 586 crossroads pending further developments.

It is evident by this time that the main attack is against Keymar. Many casualties have undoubtedly occurred in that section. Ambulance Company No. 2 has just been sent forward, leaving its wheel transport under protection of the hill just south of Keymar and establishing its dressing station somewhere north of Keymar, having special reference to the infantry losses. The exact location will depend on the line occupied by the 3d Brigade, regarding which the problem does not inform us.

Ambulance Company No. 3 would be ordered about the same time into the position vacated by Ambulance Company No. 2, probably having to recross Little Pipe Creek in order to reach it. It has become clear that more sanitary assistance will shortly be needed near Keymar.

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Ambulance Company No. 4 awaits further orders where it is.

Field Hospital No. 1 is ordered to move to the position to which Ambulance Company No. 3 has just been ordered.

With the battle undecided, it is not advisable to bring more field hospitals so near the line. Field Hospital No. 2 remains at Ladiesburg. Field Hospitals No. 3 and No. 4 are ordered to Ladiesburg to await orders. The medical reserve train remains at Woodsboro. Ladiesburg has been designated as the station for slightly wounded, to which those able to walk will be sent. The personnel of the field hospital there will look out for them.

In Period B, the action as a whole, if not over, is at least suspended until daylight. As the fighting has been so severe near Keymar, probably most of the reserves have been absorbed. The lines as extended are not specified, hence the exact location of the new dressing stations which will be established cannot be given but under cover of darkness they can and will be located close to the lines.

Ambulance Company No. 3, on arriving at Little Pipe Creek crossing, would probably be sent directly to the front through Keymar, leaving its wheel transport with that of Ambulance Company No. 2 temporarily to await orders.

Orders issued at about the same time would move Ambulance Company No. 4, less wheel transport, to a point where it could work with the 2d Brigade, if any of it came into action, and at the same time get into touch with the 2d Field Artillery. Its train would rejoin at its dressing station by 516 and Middleburg at sunset. If the 2d Brigade were held out, Ambulance Company No. 4 would supplement Nos. 2 and 3.

After dark—and before, if not too much exposed—the transport of all ambulance companies would move directly to the dressing stations of their respective companies and

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close to the the firing line, evacuating wounded into the nearest field hospital.

Assuming that the losses near Trevanion warrant it, Field Hospital No. 1 will have been sent to establish at the crossroads and house in the valley near the letter N in "Uniontown," half a mile southwest of Fairview School. This point drains the entire front, from which it is less than two miles distant. If necessary to keep it there tomorrow it is well protected.

Field Hospitals Nos. 2, 3 and 4 would probably all go in at the first roadfork north of the crossing of Little Pipe Creek. The resources of all these hospitals will probably be necessary, in view of the heavy losses. The point is readily accessible by all roads leading from all points of the Keymar sector, from all parts of which (except the battalion in the bend of Big Pipe Creek) it is only about half a mile distant. It has the further advantage of water, buildings, and being on a railroad which may later be opened; it is also protected in case fighting is resumed tomorrow.

The medical reserve train is ordered to the position of these three field hospitals for the resupply before 3 A. M. of all sanitary units and detachments. At the hour named it will start to return to Woodsboro.

The necessary sanitary personnel and supplies have been left at Ladiesburg to care for the slightly wounded making their own way there.

2d Requirement, orders and dispositions for policing the battlefield:

1st Division,
Near Keymar,
3 June 11, 6-30 P. M.

To Lt. Col. M. D.:

1. The enemy's attack has been repulsed at all points.

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2. This division will bivouac in its present position, prepared to resist any further attack.

3. The battlefield will be policed without delay, under your direction. Brigade commanders will furnish you such assistance as may be required in searching the areas occupied by their organizations.

4. Field hospitals will be established about half a mile south of Keymar, and the same distance southwest of Fairview School.

5. All empty wagons returning from the front will report at these hospitals and take on wounded for return to Woodsboro.

6. All wounded will be evacuated on Woodsboro where cars will be available after midnight.

7. Division headquarters in Keymar.

X,
Chief of Staff.

1st Division,
Near Keymar,
3 June 11, 6-40 P. M.

To Commanding Officer,
Line of Communications:

Have suffered heavy losses, now estimated at —— wounded, which I am evacuating on Woodsboro. Have necessary cars, sanitary personnel and supplies there to begin taking them over by midnight.

X,
Chief of Staff.

1st Division,
Near Keymar,
3 June 11, 6-50 P. M.

To Colonel Z, Provost Marshal:

Send all transportation in this vicinity, at Woods-

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boro and all intermediate points, suitable for conveying wounded, to field hospitals established one-half mile south of Keymar.

X,
Chief of Staff.

The actual dispositions for clearing the battlefield would be made by the director of ambulance companies under general orders from the chief surgeon.

The former would probably direct about as follows:

1st Ambulance Company to police the sector of the field occupied by the 1st Brigade, including the position of the engineer battalion, and to ask the brigade commander for the necessary assistance.

2d Ambulance Company, assisted by two companies of the 3d Brigade, to police the sector west of the railroad, including the artillery position.

3d Ambulance Company, assisted by two companies of the 2d Brigade, to police the sector from the railroad east to the little creek about 1400 yards from the same.

4th Ambulance Company, assisted by two companies of the 2d Brigade, to police the sector east of the little creek just mentioned, including the artillery position and the infantry position in the bend of the creek, as far as the unimproved road running in just east of Middleburg.

The searching parties from the line are made rather large owing to the great difficulty of finding and collecting wounded after dark. They work under the immediate direction of the respective ambulance company commanders.

By daylight, at least two ambulance companies and one field hospital should be packed up and in readiness to move.

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Series D*--Covering the Line of Supply

PROBLEM 22

A March

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP

The Potomac River forms part of the boundary between hostile states, Blue to the north. The District of Columbia is a neutral state.

The main Northern army is on the general line Middletown—Frederick—Mt. Airy. The 1st Division, however, is near Bruceville, south of Taneytown. The Northern Central R. R. is its line of supply, Columbia the principal depot.

The main Red army is in close touch with the Blues.

At 10 P. M., June 1st, Major General A, commanding the 1st Blue Division, receives the following order:

1st Field Army,
Frederick,
1 June 12, 9 P. M.

Major General A,
1st Division,
Bruceville:

It is reliably reported that a hostile force of all arms, probably a division, passed through CHAMBERSBURG this morning, marching east. Hostile cavalry is in GETTYSBURG tonight. The commanding general directs that you march tomorrow to LITTLESTOWN and protect our base and line of supply against this force.

Y,
Chief of Staff.

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*Special Class for Field Officers, 1912, Map Problems Nos. 1 to 6—4th Series

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A later dispatch authorizes General A to communicate directly with the commanding officer, Line of Communications, as to supplies.

Required:

1. General A's march order for June 2d.
2. Briefly, reasons for arrangement of column.

Solution, 1st Requirement:

1st Division,
Bruceville,
1 June 12, 10-15 P. M.

Field Orders
No. 1

Troops
Independent Cavalry:
Col. F
1st. Cav.
1 sec. Sig. Co.

Advance Guard:
Brig. Gen. B
1st Brig.
1st Bn. 1st F. A.
Co. A, 1st Bn. Engrs.
1 sec. Sig. Co.
1st Amb. Co.

Main Body—in order of march:
1 sec. Sig. Co.
4th Inf.
F. A. Brig. (less C. Tn.)
2d Brig. (less 4th Inf.)
3d Brig.

1. A hostile force of all arms, estimated at one division, passed through CHAMBERSBURG this morning, marching east. Hostile cavalry is in GETTYSBURG tonight.

2. This division will march to LITTLESTOWN tomorrow to cover our base and line of supply.

3 **a**. The independent cavalry will start at 5 A. M. and cover the movement. All roads leading out of GETTYSBURG between the YORK PIKE and the EMMITSBURG ROAD, both inclusive, will be reconnoitered. Contact with the enemy will be gained as early as practicable.

b. The advance guard will clear the bridge over PIPE CREEK by 6 A. M. and will follow the main road to LITTLESTOWN.

c. The main body will start from the bridge over PIPE CREEK at 6-30 A. M. and follow the advance guard at about one mile.

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Sig. Co. A (less dets.)
1st Bn. Engrs. (less Co. A.)
F. A. C. Tn.
2d, 3d and 4th Amb. Cos.

d. The signal corps commander will arrange for radio connection between the independent cavalry and the advance guard.

4. The trains will follow the main body at two miles, in the following order: field trains, ammunition columns, supply columns, field hospitals, medical reserve, pack train.

5. I will be with the reserve of the advance guard.

A,
Major General.

Copies by Lieutenants K and L to Brigadier Generals B, C, D, E, Colonel F, Major G, Captain H, and staff.

2d Requirement, Reasons:

The cavalry is made independent for the reason that it is of vital importance to get early information of the enemy. The mission of the cavalry will take it beyond the sphere of the advance guard and hence calls for its being made independent.

The advance guard is stronger than the mere security of the march would call for. There are two reasons for giving it this strength: First, it avoids breaking up a brigade, but this is secondary to the second, which is that, as advance guard of a division, it will probably continue on this duty for several days and therefore requires strength to prevent overworking the men. Of course, this could be obviated by changing daily, but in so large a command this is very undesirable. The artillery is added because an essential part of so large a command as a brigade, if the enemy is encountered, and he probably will be, tomorrow, if not today. Engineers are added, as there are several small bridges on the road. Cavalry was not deemed necessary with the advance guard today. General A does not know the strength of the enemy in cavalry and does not want as yet to weaken his own by detach-

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ments unless necessary. Since the cavalry is out in front, covering the march, the mounted scouts of the advance guard regiments should suffice for all nearby reconnaissance and messenger work.

The ambulance company is added in compliance with the general rule that one should always be with an advance guard of this size. There is little probability of its being needed today but, as stated before, the advance guard will probably continue for several days.

The two signal sections are placed, one with the cavalry and one with the advance guard, to facilitate communication; the officer in command of the signal company is also specially charged with arranging for this communication. This can be done by fixing certain specified times when the two sections shall open stations.

The distance to the main body and order of march of the latter need no explanation.

A fight today is extremely improbable and supplies can doubtless be drawn at Littlestown tonight without calling on the supply column. The field train then is about all of the trains that will be wanted at the end of the march and hence is placed first. The order of the others is of little importance today except that part at least of the ammunition should be where it can be gotten at if necessary.

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PROBLEM 23*

A Halt

GEOLOGICAL SURVEY MAP

Situation:

During the day's march the following information was received by General A:

The 1st Cavalry met a force of hostile cavalry of about two squadrons near Germantown, defeated it and drove it back on Gettysburg. The cavalry learned from friendly inhabitants that the advance of a hostile column of all arms reached Seven Stars at about 11 A. M., but could obtain no definite information as to its strength. The railroads leading east and north from Gettysburg were interrupted by the enemy

At 1 P. M., as General A reaches Littlestown at the head of the reserve of the advance guard, he decides to halt for the night.

Required:

General A's orders and, briefly, his reasons.

Solution:

1st Division,
Littlestown,
2 June 12, 1-15 P. M.

Field Orders
No. 2

1. Our cavalry met the hostile cavalry near GERMANTOWN this morning, defeated it and drove it back on GETTYSBURG.

*A continuation of Problem 22.

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A hostile column of all arms reached SEVEN STARS at 11 A. M.

2. The division will halt for the night.

3 **a**. The advance guard, reinforced by one troop, 1st Cavalry, will camp near ALLOWAY CREEK and the BALTIMORE PIKE and establish outposts on the general line ST. LUKE'S CHURCH—GERMANTOWN—hill 568, observing from the left to ROCK CREEK.

In case of attack the outpost will be supported.

b. The 2d Brigade will camp in the northeast angle of the BALTIMORE PIKE and the road we are marching on.

c. The 3d Brigade will camp in the northwest angle of the same crossroads as the 2d Brigade.

d. The artillery brigade (less 1 battalion) will camp southwest of the village and east of the railroad near where the unimproved road crosses the track.

e. The cavalry will remain in observation of the enemy until 6 P. M., then go into camp near the little stream east of ASH GROVE SCHOOL.

The colonel commanding will send one troop to report to Brigadier General B by 3 P. M. for outpost duty.

f. The engineer battalion (less one company) will camp west of the 3d Brigade.

g. Company A, Signal Corps, will camp with the engineer battalion. It will establish a telephone line from the advance guard commander to my headquarters.

h. The 2d, 3d and 4th Ambulance Companies will camp at OAK GROVE SCHOOL.

4. The field trains will join their organizations.

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The other trains will be parked for the night near KINGSDALE.

5. Issues will be made at 6 P. M. at the railroad station at LITTLESTOWN.

Division headquarters at northern exit of the village where orders will be issued at 10 P. M.

A,
Major General.

Copies to adjutants of organizations sent for same.

Verbally to Chief Supply Officer:

Have two days rations placed near railroad station and issue to field trains there.

Note: This instruction to the supply officer would probably have been given earlier in the day and the chief of staff would have notified Line of Communications commander in the morning.

Reasons:

The main body has marched about 12½ miles today, the supports of the outpost 16. With the meager information General A has of the enemy's strength and intentions, it is not advisable to push on and possibly bring on an engagement between his tired command and an enemy who will probably have a strong position and who may be superior to him in strength.

General A has complied with his orders and marched to Littlestown, he has interposed between the enemy and the nearest point on the railroad, and he is in position to take the enemy in flank should he attempt to strike the railroad on either side of him. His decision is influenced by the fact that his cavalry has shown superiority to the hostile cavalry, thus ensuring him reliable and prompt information of a movement by the enemy to pass him to the north.

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That he must camp west of the railroad with outposts far enough out to make the line of resistance beyond artillery range of the road seems evident.

There is no necessity of drawing supplies from the train and reloading those wagons; it is simpler to have the supplies issued directly from the cars.

The advance guard is reinforced with a troop of cavalry for two reasons: first, the mounted scouts have done the nearby reconnaissance work all day and probably will do it again tomorrow and hence need rest; second, he wants better trained and better mounted men for the outpost patrolling. Tomorrow the outpost troop can be placed at the rear of the main body of the cavalry where it will not have hard work and where it can get some rest. The troop for the outpost is ordered in early so as to give it time to feed and water before entering upon its duties for the night.

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PROBLEM 24*

An Attack

GEOLOGICAL SURVEY MAP
GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

When the 1st Cavalry came into camp, shortly after 6 P. M., the colonel reported that the enemy had gone into camp south and west of Gettysburg with outpost extending from Round Top to north of Wolf Hill.

The enemy's strength from all data available was estimated at not more than a brigade of infantry, 2 squadrons of cavalry, and possibly a regiment of field artillery.

Strategic patrols sent toward Cashtown report, in a roundabout way, that there was no enemy in that vicinity.

General A sent reports of all information to army headquarters. A message from the chief of staff, received at 9 P. M., authorized him to use his own judgment as to his next move.

Required:

General A's decision and orders for June 3d.

Solution:

General A decides to issue an assembly order tonight to have the command ready to march at 5.30 except the cavalry, which is to move at 5 A. M.

If no new information is received by morning, to move against the enemy in two columns, one by the Baltimore

*A continuation of Problems 22–23.

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Pike, the other by Boneauville, and to destroy him or drive him back.

1st Division,
Littlestown,
2 June 12, 9-30 P. M.

Field Orders
No. 3

1. The enemy in our front, estimated at a reinforced brigade, has gone into camp about GETTYSBURG with outposts extending from ROUNDTOP to north of WOLF HILL.

2. The 1st Cavalry will move out at 5 A. M. and reconnoiter toward and beyond GETTYSBURG. Prompt information of any movement of the enemy is desired.

3. The remainder of the troops will be ready to march at 5-30 A. M.

4. The trains will be ready to march at 8-30 A. M.

5. Orders will be issued at these headquarters at 4-45 A. M.

A,
Major General.

Dictated to the assembled adjutants and division staff.

1st Division,
Littlestown,
3 June 12, 4-45 A. M.

Field Orders
No. 4

1. Nothing new is heard of the enemy.

2. This division will advance in two columns against the enemy.

3. The right column under Brigadier General C, consisting of the 2d Brigade, 2d Regiment Field Artil-

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lery, Company B, 1st Battalion Engineers, and 2d Ambulance Company, will march at 5-30 A. M. by WHITEHALL and BONEAUVILLE on GETTYSBURG.

If the enemy is encountered he will be vigorously attacked.

4. The left column under Brigadier General B, consisting of the present outpost, reinforced by the 2d Battalion, 1st Field Artillery, will march at 5-30 A. M. on GETTYSBURG by the BALTIMORE PIKE.

If the enemy is encountered he will be vigorously attacked.

5. The 3d Brigade and Companies C and D, 1st Battalion Engineers, will constitute the reserve and will follow the left column at 800 yards.

6. The 3d and 4th Ambulance Companies will follow the reserve.

7. The trains will be divided into two sections as follows: 1st Section: 1 wagon company, small arms ammunition; 2 wagon companies, artillery ammunition; the field hospitals. 2d Section, in the following order: field trains, 1 section supply column, remainder of ammunition column, medical reserve, remaining sections supply column, pack train. The 1st Section will follow the reserve at 3 miles. The 2d section will halt in column, head at OAK GROVE SCHOOL, except field trains, which will remain where they are until ordered to march.

8. I will be between the reserve and left column.

A,
Major General.

Copies to officers sent to receive orders.

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PROBLEM 25*

A Halt After a Pursuit

GEOLOGICAL SURVEY MAP

ARENDTSVILLE, KNOXLYN AND GETTYSBURG THREE-INCH SHEETS

Situation:

As General A's division advanced the enemy occupied his outpost line. The left column attacked in front, the right a half-hour later enveloped the enemy's left. After about three hours' fighting the enemy withdrew, his rear guard taking up a position at Seven Stars. General A again attacked and drove him back towards Cashtown. At this time, 6 P. M., a cavalry patrol reported that the enemy had received reinforcements and was intrenching near Cashtown; the reinforcements amounted, it was estimated, to about a brigade.

The 3d Brigade had not been very seriously engaged, the other two had lost about 700 men, about equally divided between the two brigades. The enemy left about 300 wounded and 250 unwounded prisoners in General A's hands.

General A decides to halt for the night.

Required:

1. The orders to the troops at this time.

2. Any orders given previously during the day to other than the combatants.

*A continuation of Problems 22–24.

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Solution, 1st Requirement:

1st Division,
West of Gettysburg,
3 June 12, 6-30 P. M.

Field Orders
No. 5

1. The enemy has been decisively defeated and forced in retreat on CASHTOWN, where he is now intrenching having been reinforced by about a brigade. About 550 prisoners have been taken.

The cavalry is in pursuit and will maintain contact until dusk.

2. The division will halt for the night.

3. The 3d Brigade will camp at the crossing of MARSH CREEK and the CHAMBERSBURG ROAD and establish outpost on the line MUMMASBURG—SEVEN STARS—KNOXLYN.

In case of attack the ridge east of SEVEN STARS will be held.

4. The remaining troops will camp as follows:

1st Brigade at KATALYSINE SPRING.

2d Brigade north of CHAMBERSBURG ROAD opposite 1st Brigade.

Field artillery brigade east of 2d Brigade.

1st Battalion Engineers, and Company A, Signal Corps, on west edge of town near CHAMBERSBURG ROAD.

The sanitary troops, after completion of their present duties, will camp southwest of town.

The field trains will join their organizations; that of the cavalry will be held with the reserve of the outpost.

The other trains will camp on WHITE RUN.

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5. Small arms ammunition will be at crossroads 577 at 8 P. M. All battalion commanders will see that their deficiencies are made good.

Artillery ammunition will be placed at 8 P. M. at the north edge of MCPHERSON RIDGE to replenish supply of the artillery brigade.

Issues of rations to field trains will be made at the central square in GETTYSBURG at 8 P. M.

6. The 1st and 2d Brigades will have one company each and their bands report to the division surgeon to police the battlefield.

The engineer battalion will report to the division surgeon to assist.

7. Division headquarters at first house west of crossroads 577, where orders will be issued at 4-45 A. M. tomorrow.

A,
Major General.

Dictated to officers sent to receive orders.

1st Division,
West of Gettysburg,
3 June 12, 6 P. M.

To Colonel F,
1st Cavalry:

The enemy's rear guard is retreating. The division will halt here for the night with the outpost on the line MUMMASBURG—KNOXLYN.

Pursue the enemy and keep in contact until dusk. Then leave efficient patrols to observe and resume contact with the enemy at 5 A. M.

You may withdraw behind the outpost for the night, or bivouac to the front; in the latter case report your camping place.

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Your field trains will be held for you at the reserve of the outpost.

Division headquarters at first house west of cross-roads 577 where orders will be issued at 4-45 A. M. tomorrow.

A,
Major General.

As soon as it was evident the attack would succeed, orders were sent to the commander of the trains to bring them to White Run.

Orders were sent by telegraph to have the day's rations for men and animals placed at Littlestown; also * * * thousand rifle cartridges and * * * rounds for field guns.

After the enemy retreated from his first position two field hospitals were brought forward. The 1st was established near Rock Creek and the Baltimore Pike; the 2d in Gettysburg.

Verbally to Division Surgeon:

All the bands, the battalion of engineers, and one company from the 1st and one from the 2d Brigade will be directed to report to you to police the field. You will take charge of the work.

Evacuate the wounded as far as practicable tonight through Littlestown.

The empty wagons of the train will report to you at 9.30 P. M. at the 1st Field Hospital on their way to Littlestown. Use them to send back such wounded as will bear that kind of transportation.

Transportation in Gettysburg will be impressed and reported to you at the same time for the same purpose. Serious cases that will not bear transportation should be collected in Gettysburg. Take possession of a suitable building for the purpose.

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1st Division,
Gettysburg,
3 June 12, 6-30 P. M.

To Commander of Trains:

Have one wagon company small arms ammunition at crossroads 577 at 8 P. M.

One wagon company artillery ammunition at north edge of MCPHERSON RIDGE at 8 P. M.

1st Section, supply, will be ready to issue at the Central Square in GETTYSBURG at 8 P. M.

The empty wagons will return to LITTLESTOWN tonight to refill and will report to Field Hospital No. 1 at the crossing of ROCK CREEK, on the way, to carry back wounded. Have your wagons well filled with straw or hay.

X,
Chief of Staff.

1st Division,
Gettysburg,
3 June 12, 6-30 P. M.

To Colonel 4th Infantry,

Through brigade commander:

Have one company and ten mounted scouts of your regiment report to the Provost Marshal at the southern exit of GETTYSBURG (junction EMMITSBURG ROAD and BALTIMORE PIKE) at 7-30 P. M. to escort the prisoners of war to LITTLESTOWN.

X,
Chief of Staff.

Copy to Provost Marshal with instructions to have the unwounded prisoners ready to march at 7.30.

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Verbally to Division Quartermaster:

> Arrange to hire or impress available wagons in Gettysburg and vicinity and have them report to Field Hospital No. 1 to carry wounded to Littlestown.

Telegram to commander, Line of Communications, for transportation for prisoners from Littlestown.

The Division Surgeon would communicate with the Chief Surgeon of the Line of Communications in regard to the movement of the wounded.

Nothing is said of constructing telegraph lines to Littlestown. The repair, if necessary, of a line between the towns would be done by the signal company as it advanced.

A report of the day's events, etc., is sent to field army headquarters by telegraph.

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PROBLEM 26*

On the Defensive

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP

Situation:

At 10 P. M. General A received the following:

1st Field Army,
Frederick,
3 June 12, 9 P. M.

Major General A,
1st Division,
Gettysburg.

From reliable information it appears that at least one division has left here to reinforce a part of a division from the west, and this force is now in your front or will be by early tomorrow.

We shall attack the enemy in our front tomorrow at dawn. You must hold the enemy in your front. If successful in tomorrow's fight will send you reinforcements tomorrow night, if unsuccessful we will probably retreat through Littlestown.

Y,
Chief of Staff.

Cavalry patrols reported that additional reinforcements were arriving in the enemy's camp up to 8 P. M.

At 6.45 A. M. report was received from Colonel F dated 6.15 A. M. that the enemy was advancing eastward through Cashtown.

*A continuation of Problems 22–25.

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Required:

General A's decision and orders.

Solution:

Decision: To stand on the defensive and stubbornly resist an advance by the enemy.

1st Division,
West of Gettysburg,
4 June 12, 4-40 A. M.

Field Orders
No. 6

1. The enemy at CASHTOWN has been heavily reinforced by troops drawn from his main army.

Our army will attack the depleted hostile force in its front this morning and if successful will later reinforce us if necessary.

2. We will take up a position across this road and must hold it during the day.

3 **a**. The 2d Field Artillery will move by the MUMMASBURG road to the road leading southwest about half a mile from MUMMASBURG, thence by this road to near its intersection with the farm road. The colonel will select and prepare a position in this vicinity from which to support the defense if attacked.

The 1st Field Artillery will move by the road parallel to the CHAMBERSBURG ROAD, about half a mile south of its camp, to a point about one mile south of SEVEN STARS and there select and prepare a position to support the defense.

b. The 3d Brigade will at once prepare for defense a line extending from a short distance east of SEVEN STARS southwest for about ¾ of a mile.

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c. The 2d Brigade will prepare for defense a line extending from near SEVEN STARS northwest to the farm road crossing the ridge.

d. The engineer battalion will proceed to the high ground southwest of MUMMASBURG and prepare for defense and act as right flank guard.

e. The 1st Brigade will constitute the reserve under my orders and will be held at first at roadfork about midway between KNOXLYN and 597. The brigade commander will send one battalion with a machine gun platoon and 6 scouts to the knoll northwest of KNOXLYN where it will intrench as left flank guard.

The present outpost will stand relieved as soon as the troops reach their new positions, when each command will provide for its own reconnaissance to the front.

The intrenchment will be prepared on lines specified, but commands must be ready to move promptly to meet an attack in other directions.

f. The 1st Cavalry, if the enemy advances in force, will send two platoons to report to the major commanding the engineer battalion near MUMMASBURG for patrolling on our right flank; its main body on our left west of KNOXLYN will cover our left.

g. Company A, Signal Corps, will lay lines to the position of the reserve from the 2d Field Artillery, cutting in a station for the commander of the 2d Brigade, also from the 1st Field Artillery, cutting in a station for the commander of 3d Brigade. It will arrange to receive flag signals from the engineer battalion and from the cavalry on the left flank.

4. The ambulance companies will be held at the north end of HERR RIDGE.

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The 2d Field Hospital now established in GETTYSBURG will remain as at present.

The 1st, 3d and 4th will assemble off the road near western outskirts of GETTYSBURG.

5. The trains will be held as follows: two wagon companies of small arms ammunition near 577, one wagon company artillery ammunition near 585 and one near 587.

All other trains off the road, but ready to move in either direction, between TWO TAVERNS and ROCK CREEK, field trains farthest west.

6. Division headquarters at 597.

A,
Major General.

Copies to officers sent to receive same.

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PROBLEM 27*

In a Losing Fight

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
ARENDTSVILLE, KNOXLYN, GETTYSBURG THREE-INCH SHEETS

Situation:

The enemy began the attack shortly after 8 A. M., his principal effort being against the Blue left.

By 3 P. M. the reserve brigade (1st) had been nearly all deployed on a line extending from northwest of Knoxlyn to connect with the 3d Brigade. As there was little pressure on the 2d Brigade, the 5th and the 1st Battalion of the 6th Regiments of Infantry had been withdrawn to form a new reserve and were northwest of 504. The engineer battalion was called in, leaving only a strong patrol on the flank, as brigade reserve for the 2d Brigade and was near their line. The cavalry had done considerable fighting on foot to keep hostile troops from crossing the mountains and with some help sent from the 1st Brigade had so far succeeded.

At this hour the latest information from army headquarters was that prospects were good for a Blue victory.

General A estimated that the strength of the enemy in his immediate front was but little short of two divisions, and that his chances of successfully holding his position were very poor.

At 4.30 P. M. a telegram from army headquarters stated that enemy's right had broken in rout and that success was certain, but that troops could not be sent by rail to reach

*A continuation of Problems 22–26.

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Littlestown before midnight; that the day had been a hard one.

At 4.45 the general reserve was reduced to the 5th Infantry; local reserves, except the engineer battalion, were practically exhausted; defeat was certain. The line could probably be held only for a short time longer.

Required:

1. Orders given other than tactical up to 4.30 P. M.
2. Orders given from 4.30 to 6.30 P. M.

Solution, 1st Requirement:

Instructions to division surgeon, to evacuate wounded to Littlestown as rapidly as possible, would have been given early in the day and officers and men detailed to impress or hire wagons and to help in the work. At 3 o'clock he would have been told confidentially to be prepared for a retreat.

By 4 P. M. trains would have been ordered to start for Littlestown and to park east of the town.

2d Requirement:

At 4.45, by telephone, to commander 2d Brigade:

> We shall have to fall back soon. You must hold your position for a short time. Order engineer battalion to move at once to high ground west of Peach Orchard where part of 2d Field Artillery will also be sent. A staff officer will be there to give them instructions.

By telephone, to Colonel, 2d Field Artillery:

> Send one battalion of your regiment at once to high ground west of Peach Orchard to assist in withdrawal of command. Staff officer will meet it there with orders. Increase fire with other battalion for thirty minutes, then follow the first.

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To commander, reserve regiment:

Move as promptly as practicable to the high ground near 527 on the Marsh Creek road about half a mile south of Fairplay School. Artillery will join you there. You are to cover withdrawal of the line.

By telephone to Colonel, 1st Field Artillery:

Send one battalion of your regiment at once to 527 about half a mile south of Fair Play to take position to cover withdrawal of command. Reserve infantry already ordered there. Before infantry withdraws you will be notified and will then send other battalion to same place.

To commanders, 3d Brigade and 1st Brigade:

We shall have to withdraw soon; you must hold your line until troops to cover withdrawal are in position. You will then be notified and will withdraw on Littlestown. You must get your commands in hand as soon as practicable after crossing Rock Creek.

Our main army has won its battle and will send reinforcements to Littlestown by rail tonight.

Explanation to staff officers:

We shall have to withdraw. The 5th Infantry and 1st Field Artillery are under way to near 527 to cover withdrawal of our left. The engineer battalion and 2d Field Artillery are en route to high ground west of Peach Orchard to cover withdrawal of the 5th Infantry and 2d Field Artillery; the latter will then move south of the Round Tops to high ground east of Rock Creek; there we will make a stand until dark.

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Captain M, you explain fully the plan to the force at 527. Captain N, you go to the position west of Peach Orchard and explain to them. Dwell strongly on the information that our main army was victorious today and that reinforcements will reach us tonight.

When conditions and plans are thoroughly understood by the covering detachments, and in time to precede the retreating troops, go to east side of Rock Creek and endeavor to get some formed men in hand to check the enemy there. A rear guard will be formed from there on.

To Colonel F, 1st Cavalry:

We shall soon have to withdraw. You will then join the covering detachment southwest of Fair Play School under orders of Colonel G, 5th Infantry.

Verbally to Division Surgeon:

We must withdraw soon; arrange to leave necessary medical personnel and material with our wounded. Have as many as possible withdrawn, also material not required.

At the proper time to commander, 2d Brigade:

Our main army has won a victory today and will reinforce us tonight. Withdraw your brigade through Boneauville on Littlestown; get it in hand at Mount Vernon School if possible and hold there for orders.

After the 2d Brigade was started the 3d and then the 1st were started with instructions to move by the Baltimore Turnpike. After giving the orders to the 1st Brigade, General A would ride rapidly to the 5th Infantry, see that they thoroughly understood what they were to do and place

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the senior colonel in command of the three regiments. He would then ride rapidly to the engineer battalion and 2d Field Artillery to make sure that they understood, after which he would go to the east side of Rock Creek with all his staff to try and form a defensive line of reorganized troops as they come back.

If he can get a strong enough line he will probably be able to reorganize his command as darkness will soon be with him.

The trains have gone to the rear; subsistence will be from the emergency ration tomorrow morning; the men have supper in their haversacks.

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Series E*—On the Enemy's Line of Communications

PROBLEM 28

After a Long March

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
NEW OXFORD AND BONEAUVILLE THREE-INCH SHEETS

Situation:

The Pennsylvania-Maryland line forms part of the boundary between hostile states. Harper's Ferry is the capital of the Southern state and Harrisburg of the Northern state.

On the morning of September 1st the Northern army is stationed as follows: 1st, 2d, Cavalry and Auxiliary Divisions about Gettysburg, 3d Division at Chambersburg, 4th Division at York.

The Southern army on August 31st was reported at Westminister, Taneytown, Thurmont and Hagerstown.

According to reports received the Southern army also consists of four divisions, a cavalry division and auxiliary division. The northern cavalry division, however, is the stronger, having three brigades while the Southern has but two.

The only contact so far has been between the cavalry divisions in which the Northern was successful in routing with considerable loss the Southern.

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*The Army Staff College, 1910–11, Map Problems Nos. 6 to 11—1st Series.

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In the course of September 1st the Northern commander learned that the enemy was moving north apparently on Chambersburg and Gettysburg.

At 8 P. M., on this date he telegraphed to General A, commanding the 4th Division at York, that he anticipated an attack the next day or the day after and for General A to march September 2d on Gettysburg to join the main army.

September 2d General A marched on Gettysburg by the York Turnpike.

Order of March: Independent Cavalry—Colonel F, 4th Cavalry; Advance Guard—Brigadier General B, 1st Brigade, 1st Battalion, 7th Field Artillery, 1st Ambulance Company; Main Body in order of march—31st Infantry, Artillery Brigade—less 1 battalion (firing batteries only), 2d Brigade—less 31st Infantry, 3d Brigade, 4th Battalion Engineers, 4th Signal Company, artillery combat train, 2d, 3d, and 4th Ambulance Companies. Trains 3 miles in rear of main body.

Early in the day General A learned through his cavalry that a battle was on between the two main forces.

At 3 P. M., after a march of 18 miles, as his advance guard was passing through New Oxford, a staff officer from army headquarters reported to him that the Northern army had been attacked, about 5 A. M., by superior numbers in front and struck soon after in flank by a force from the west and driven from the field. At 11 A. M., the army was in retreat and being pursued beyond Gettysburg. It was practically certain that the Northern force had been attacked by nearly the entire Southern army. According to this staff officer the army was not demoralized and, if it could gain a little time, would be able to save the capital.

General A's cavalry has gained contact with the cavalry division and learned that heavy hostile columns are moving north on the Carlisle and Harrisburg roads in close pursuit

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of the Northern army and that the hostile cavalry has again been defeated and driven west.

The weather is fair, moderately warm. The division is organized as in F. S. R. except that it has but one company of signal troops.

Required:

1. General A's decision.
2. Any orders issued.
3. His reasons.

Solution, 1st Requirement:

Decision: to camp for the night.

2d Requirement, Orders:

4th Division,
New Oxford,
2 Sept. 10, 3-15 P. M.

Field Orders
No. 2

1. The part of our army near GETTYSBURG was today attacked by the Southern army and has fallen back towards HARRISBURG followed by the enemy. Our cavalry division defeated that of the enemy.

2. This division will halt for the night.

3 **a.** The advance guard will camp at NEW OXFORD and establish outpost along the line of the LITTLE CONEWAGO observing from the CONEWAGO CREEK to the bridge about 1¾ miles south of where the YORK TURNPIKE crosses LITTLE CONEWAGO.

Two troops of cavalry will report to the advance guard commander for duty.

b. The 4th Cavalry will continue its reconnais-

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sance to the west and northwest until sundown and then withdraw to NEW OXFORD and camp near and southwest of that town.

The Colonel will send two troops, on receipt of this order, to report to the advance guard commander, Brigadier General B, for outpost duty.

c. The 2d Brigade will camp in the northeast angle formed by the YORK TURNPIKE and the BALTIMORE—CARLISLE TURNPIKE.

The 3d Brigade will camp in the southeast angle of the same roads.

The artillery brigade will camp on both sides of the YORK TURNPIKE just east of the infantry.

The engineer battalion will camp north of the YORK TURNPIKE east of the artillery.

The ambulance companies south of the engineer battalion.

4. The field trains will join their organizations. The supply trains, ammunition columns and field hospitals will camp where they are now.

5. Issues will be made at the railroad station at NEW OXFORD at 6-30 P. M. today.

6. Division headquarters will camp near the YORK TURNPIKE about ½ mile west of 2d Brigade.

A,
Major General.

Copies by Lt. L, to Col. F, 4th Cav., by Capt. M, to brigade commanders and to officer in charge of trains; verbally to staff.

3d Requirement, Reasons:

General A's division has marched 18 miles today, a long march for so large a command. It is about 10 miles to Gettysburg, and the same distance to York Springs.

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He has no orders from army headquarters covering this emergency.

The situation is by no means clear to him. There are four courses open to him: to push on to Gettysburg; to turn north to York Springs; to return by the road he came; and to halt and await further information.

The division could make but little more distance to-night, and which ever way he were to move might be in a direction different from what later information would show him to be desirable. By halting and giving his command a rest he can probably soon gain more definite information and thus be able to act more intelligently; ultimately no time will be lost by this course; probably it will thereby be gained.

Although the cavalry regiment is brought into camp for the night, officers' patrols will still be kept out and besides, the cavalry of the outpost will keep up reconnaissance.

As New Oxford is on the railroad leading back to his base, General A would have ordered the day's supplies sent there and issued to spare his train unnecessary marching.

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PROBLEM 29*

In a Critical Situation

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP
HUNTERSTOWN, NEW OXFORD, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

During the night General A learns from telegrams from the capital that the 3d Division had started for Gettysburg on the morning of the 2d and had been delayed at first by a detachment in its front, later on learning of the disaster at Gettysburg it had commenced its retreat on Harrisburg.

From spies and from the cavalry General A learns: that one hostile division is marching by York Springs on Harrisburg, its advance now at York Springs, one by Mt. Holley and Carlisle and one through Chambersburg; that the fourth division, which had suffered most in the battle, has remained at Gettysburg to police the field and guard the line of communications; that Gettysburg is being made the enemy's advance depot, the W. M. R. R. being his line of supply as the railroads in the Cumberland Valley have been wrecked.

General A could not get in communication with army headquarters and the line to Harrisburg was broken early in the night.

Required:

1. General A's orders for September 3.
2. His reasons.

*A continuation of Problem 28.

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Solution, 1st Requirement:

4th Division,
New Oxford,
3 Sept. 10, 4 A. M.

Field Orders
No. 3

Troops
a. Independent Cav.:
Col. F
4th Cav.
(less 2 tps.)

b. Advance Guard:
Brig. Gen. B
1st Brig.
1st Bn. 7th F. A.
2 tps. 4th Cav.
4th Bn. Engrs.
1st Amb. Co.

c. Main Body—in order of March:
34th Inf.
F. A. Brig. (less 1st Bn. 7th F. A. and C. Tn.)
3d Brig. (less 34th Inf.)
2d Brig.
F. A. C. Tn.
3 amb. cos.

1. The enemy has continued his advance toward HARRISBURG with all his army except one division which suffered heaviest in yesterday's battle, which division is now at GETTYSBURG, to police the field and guard the advance depot, the enemy has established there.

Our army is retiring on HARRISBURG.

2. This division will move on GETTYSBURG.

3 **a**. The independent cavalry will start at 5 A. M., and advance on GETTYSBURG reconnoitering the roads leading north, especially the CARLISLE and HARRISBURG roads.

The railroad north from GETTYSBURG will be interrupted, preferably by destroying the bridge over CONEWAGO CREEK.

The wagon bridges over this creek on the CARLISLE and HARRISBURG roads will also be destroyed.

b. The advance guard will march on GETTYSBURG by the YORK TURNPIKE and clear NEW OXFORD by 5-45 A. M. Reconnaissance will be made through BONEAUVILLE and to the BALTIMORE TURNPIKE.

c. The main body will follow the advance guard at a distance of about one mile.

4. The trains will be divided as follows: 1st Section—1 wagon company, small arms ammunition and one

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wagon company, artillery ammunition, and the field hospitals; 2d Section—the field trains, supply trains, and remainder of ammunition columns.

The 1st Section will follow the main body at 2 miles.

The 2d Section at 8 A. M. will be parked east of NEW OXFORD.

5. Messages to the head of the reserve of the advance guard.

A,
Major General.

Copies to staff officers sent to receive orders.

2d Requirement:

General A can get no orders as to what he is to do and it is uncertain when he can get such orders. The unpardonable thing for him to do would be to remain inactive. The situation for the Northern army is critical. If the enemy can push right on close to the defeated Northern army the capital is likely to fall.

If General A marches on York Springs he is practically a day's march behind the enemy and likely to be too late to do any good. The enemy could use a small delaying force against him and then, if successful against Harrisburg, General A's situation would be critical. To go back to York and thence to Harrisburg would take him three days; he is almost certain to arrive too late to be of assistance in saving the capital.

By moving on Gettysburg he can strike the force there before noon; if he defeats it he can cut the enemy's line of communication and destroy his depot.

After a battle the enemy will likely need ammunition and would not care to engage in a pitched battle with his supply entirely cut off.

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General A has a good chance of defeating the enemy. The troops in Gettysburg consist of one division, the same as his own, but it is a division which has suffered heavily in the recent battle and is therefore weaker now than General A's; it is probably more or less scattered, policing the field, guarding supplies and prisoners and attending to other work of that kind; it is, furthermore, in hostile territory and has been from the start inferior in cavalry, and, therefore, is probably lacking in good information.

By no other means can General A so quickly and so effectually check the hostile advance on Harrisburg as by defeating this hostile division and driving it from Gettysburg. At the least the enemy will have to detach heavily against General A and this will give the main army a good chance to save Harrisburg.

General A appreciates fully his danger. The enemy may move on Abbottstown or even York and, by cutting off his retreat, place him in a very critical position. But he believes even then, as he is in friendly territory, that he can under the most unfavorable conditions save the bulk of his division and the heavy loss he may incur is not too great a price to pay for saving the main army and the capital.

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PROBLEM 30*

In Contact with Hostile Outposts

HUNTERSTOWN, NEW OXFORD, GETTYSBURG AND BONEAUVILLE THREE-INCH SHEETS

Situation:

The 4th Division under General A moved as ordered in the previous problem.

His divisional cavalry proved superior to any found in his front and drove in all hostile patrols.

A reliable citizen of Gettysburg who had escaped from the town about 6 A. M., reported to General A: that the troops in Gettysburg were apparently ignorant of General A's presence in the vicinity and were very busy; that large quantities of supplies had been coming into town all night, both by rail and wagon; that a long train was being loaded with ammunition and he heard a driver say it would start north at noon; that there was a wreck on the P. & R. R. R. a short distance north of Gettysburg and that it would take several hours to clear the track; and that there were a great many wounded of both sides in Gettysburg and about one thousand unwounded prisoners of war.

As General A, at the head of the advance guard, reached Guldens his cavalry sent to him a couple of hostile troopers that had been captured. From them it was learned that the enemy in Gettysburg was the hostile 2d Division and that two squadrons of the cavalry regiment of this division had been sent north late yesterday to join the cavalry division.

General B at the same time reported that he had developed a hostile outpost line extending from Boyd S. H. to

*A continuation of Problems 28–29.

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McAllister Hill, crossing the York Turnpike at hill 618; that hill 612 and Wolf Hill were both found occupied.

Required:

1. General A's orders.
2. His reasons.

Solution, 1st Requirement:

4th Division,
Near Guldens,
3 Sept. 10, 7-45 A. M.

Field Orders
No. 4

1. Further information has confirmed first report as to there being but one hostile division in GETTYSBURG and that depleted by heavy casualties in yesterday's fight and by the detaching of two squadrons of cavalry sent north.

There are about 1000 of our troops unwounded and many wounded held as prisoners of war in the town.

The hostile outpost line extends from BOYD S. H. to MCALLISTER HILL, crossing this road at hill 618. Hill 612, one mile south of this road, is occupied by the enemy, also WOLF HILL.

2. This division will attack the enemy, break through his outpost line and push on to GETTYSBURG.

The role of the advance guard as such now ceases.

3 **a**. The artillery brigade will take position just west of GRANITE HILL, part of the guns north of this road, and open fire on enemy as soon as developed.

b. The 1st Brigade will continue its advance along this road, deploying when necessary across the same, and will proceed to the attack, taking hill 618 as its objective. The brigade commander will detach one battalion to mask the enemy on hill 612.

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c. The 3d Brigade will march north on the road going in that direction from near the I. P. PLANK farm to beyond the woods and then advance north and west of the railroad against the enemy.

d. The two troops of cavalry now with the advance guard will continue to cover our left.

Colonel F will cover our right with remainder of his regiment assembling his main body on or near the HARRISBURG ROAD. Reconnaissance on all roads leading north as far west as the CARLISLE ROAD will be continued.

e. The 2d Brigade and engineer battalion will constitute the reserve under my orders and will take station under cover northwest of GRANITE HILL.

f. The signal company will connect my headquarters with the commanders of the 1st, 3d and Artillery Brigades.

4. The ambulance companies will park near and east of roadfork 617 northeast of GRANITE HILL.

The 1st Section of trains will park at GULDENS.

The 2d Section will remain where it is.

5. I will be near the PLANK farm.

A,
Major General.

Copy by Lt. K to the four brigade commanders and officer in charge of the 1st Section of trains. Verbally to staff. By orderly to 2d Section of trains.

2d Requirement, Reasons:

As General A has advanced on Gettysburg there is but one thing for him to do now, attack promptly and vigorously, break through the outpost line and capture the town.

To attack against the wooded Wolf Hill ridge would

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be ill advised; the advance guard is on the York Pike, so the next Brigade must move to its right.

The details as to the prisoners of war held in Gettysburg it is believed well to put in the order. It is an incentive to vigorous action.

The artillery brigade might have been divided and one regiment sent north with the 3d Brigade. It is believed better to put them in at first as ordered; they will be in action quicker; the position and range are good with a fine observation point close by. Later, as the action develops, roads are convenient for moving.

The 1st Brigade is not ordered to wait for the 3d. So far as known General A at first has only an outpost line to contend with. The greater part of the hostile division may be badly scattered and distant. Hill 618 should be seized if practicable before it can be strongly held and there is a good chance of General B's being able to do this. If the enemy develops too much strength General B can be trusted not to wreck his command by a premature rush; he knows that the other troops are coming to his assistance.

The ambulance companies are brought close but dressing stations are not established at the start. It is impossible to tell at this time where the severe fighting will take place. They are conveniently placed and will be ordered into action after it has been developed where they are needed.

The trains are left back in accordance with the rules for their disposition in case of battle.

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PROBLEM 31*

Measures after a Victory

GEOLOGICAL SURVEY MAP
ARENDTSVILLE, HUNTERSTOWN, KNOXLYN AND GETTYSBURG THREE-INCH SHEETS

Situation:

General A's attack was entirely successful and was apparently a surprise to the enemy.

Gettysburg was captured before 1 P. M. The hostile division seemed to be about equally divided, one half retreating west by the Chambersburg Road, the other half south by the Taneytown Road, both parts in great disorder. The hostile squadron was severely defeated and driven north.

The cavalry reported the railroad interrupted to the north and also to the south. The enemy's wagon trains about town were captured, 600 unwounded and 1500 wounded prisoners were taken. About 1000 unwounded and 800 wounded Northern soldiers, captured by the enemy the day before, were found in the town. General A had 200 killed and 800 wounded in the fight.

Many railroad cars loaded with ammunition and supplies were found in the freight yards and large quantities had been unloaded. The Western Maryland R. R. from Gettysburg east is intact. Telegraphic communication with Harrisburg has been reëstablished.

Required:

All of General A's dispositions and orders until 11 P. M.

*A continuation of Problems 28–30.

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Solution:

Verbal orders to General B, commanding 1st Brigade:

With your brigade, the 7th Field Artillery, and one troop of cavalry, pursue the enemy retreating on the Chambersburg Road. Push the pursuit vigorously but only for about four miles. Be back in Gettysburg by 5 P. M.

Leave back one battalion of infantry to assist in policing the battlefield.

Verbal orders to General C, commanding 2d Brigade:

With your brigade (less 4th Infantry), the 8th Field Artillery and one troop of cavalry, pursue the enemy retreating south. Push the pursuit vigorously but only for about four miles. Be back in Gettysburg by 5 P. M. Have the 4th Infantry report to me in Gettysburg for duty.

To General E, commanding the artillery brigade:

Have the 7th Field Artillery report to General B and the 8th to General C to take up the pursuit of the enemy.

To Colonel F, 4th Cavalry:

Have one troop of cavalry report to General B and one to General C. The remainder of your regiment is now placed under your orders.

With ten troops of your regiment move north covering the roads leading toward Harrisburg. Make use of the commercial telegraph and telephone lines, taking possession of such as you need, and push out officers' patrols well to the north to observe every road. Keep in wire communication with me here. Captain H, Signal Corps, will give you the necessary

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men to accompany your command to repair the lines if down. You will remain out until ordered back.

Early information of a movement by the enemy in this direction is of vital importance.

To the Colonel, 4th Infantry:

With your regiment establish an outpost line from Boyd S. H. to the north end of the wooded Wolf Hill ridge, following generally the line of the road. You will be reinforced if necessary before dark.

To the Division Surgeon:

Make arrangements to police promptly the battle-field; two battalions of infantry will be available to assist. Order forward such field hospital personnel and material as you can use.

To Brigadier General D, commanding 3d Brigade:

Get your command in hand as promptly as possible and take charge of all prisoners and hospitals and also of our own people released; hold them together. Place guards over the captured trains; any teams that have been unhitched, have hitched and ready to move.

Have proper details made to collect as large a force of citizens for work as can be collected in the vicinity; arrange with the town officials to help in this. Detail one battalion to assist in policing the field. Hold the remainder of your command for further orders.

To various staff officers orders were given:

To find out the number of cars of various kinds and locomotives available for running to Lancaster; how soon

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the first train can be run, number of trains before tomorrow morning, including such as can make two trips or those composed of rolling stock which can be sent to Gettysburg promptly. In other words to find out how many cars could be sent out of Gettysburg before morning.

To find out how many captured wagons and teams there are and their condition.

To find out exactly the number of our wounded in Gettysburg, those seriously and those lightly wounded. The same of the enemy and also the number of the enemy, unwounded, taken prisoners.

The railroad is ordered put in readiness to work to its full capacity as soon as practicable.

The unwounded prisoners that have been released are ordered armed as far as practicable and organized, under officers found with them or by details made from the 3d Brigade, into a provisional regiment.

The reports called for having been received, railroad trains are assigned, first, to carry back all our own wounded and sick, next as many of the hostile wounded as are likely to be soon fit for duty. The very seriously wounded of the enemy will be left. If there is not sufficient railroad transportation to carry all, first the lightly wounded of the enemy will be loaded in captured wagons, then the lightly wounded of our own side. If there is ample railroad transportation all wounded and prisoners will be sent that way. One train is to be held for the sick and wounded accumulating before the division commences its march from Gettysburg.

The captured wagons will be unloaded where the contents can be burned and then loaded if necessary as above described and, with the unwounded prisoners of war or such of them as can not be furnished railroad transportation, will be formed into a convoy, under escort of the provisional regiment, and at once started for Lancaster, with orders to

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push the march to the extreme. If no suitable officer is found, among those recaptured, to command the convoy, one will be detailed from the division.

One capable officer will be put in charge of unloading the wagons and loaded cars, the loads to be placed where they can be burned with safety; civilians and details from 3d Brigade will do this work.

As soon as the wagons are ready to start the convoy will be put in march; supplies to last for the march will be taken.

Another officer with necessary assistants will be at once put in charge of preparing and loading trains and despatching the same. He is cautioned to get them away as soon as practicable.

The division surgeon will be fully informed of plans and ordered to assist in every way in getting off the wounded.

Another officer, carefully selected, will be put in charge of destroying all captured ammunition and supplies, except such supplies as the division will consume tomorrow. This work will be begun as soon as practicable without interfering with the evacuation of the wounded, and will be thoroughly carried out without unnecessary loss of time. The engineer battalion will be divided between this detail and the one handling the trains.

This work will be kept up vigorously under the supervision of General A and his staff until completed.

The troops will be given as much rest as practicable; those not at work will be held closely in camp. The working details from the soldiers will be as small as practicable and the strictest discipline enjoined. Civilians will be worked to the limit possible.

As the day advances and nothing is heard of any enemy approaching from the north, orders are sent to the commanders of the 1st and 2d Brigades that, as they return to Gettysburg, each will leave a battalion of infantry and the cavalry three or four miles out from Gettysburg as

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guards against a return of the enemy. Telephonic connection between these outguards and headquarters will be established.

Sufficient ammunition from the trains is ordered up to Gettysburg to replenish the combat trains and the wagons thus emptied are sent back to join the 2d Section. The latter will have been ordered to Guldens.

At 5 P. M., as the 1st and 2d Brigades return to Gettysburg, the 1st Battalion, 7th Infantry, is ordered to Guldens as an additional guard for the trains.

Orders are sent the trains to go into camp for the night at that place and to be ready to march at 6 A. M.

As the brigades return the 1st is assigned camp ground between Mummasburg and Chambersburg Roads, near the town; The 2d Brigade just north of the town; the 3d brigade just northeast of town; the artillery brigade between the York and Hanover Roads near town; the auxiliary troops south of the Hanover Road. The cavalry is still held to the north.

General A makes no other changes in the outpost for the night, except to send the commander 24 additional mounted scouts from the other regiments.

At 8 P. M. verbal orders are given to brigade commanders to be ready to march at 6 A. M., but not to form their commands until ordered.

Full report is sent to Harrisburg by wire.

Reasons:

No effort is made to save any of the captured stores because their destruction is quicker and surer. Their loss to the enemy will likely force a halt on his movement. General A is not going to be given much time to dispose of them; he must take the surest way.

The wagon train by moving empty and starting at once can without much doubt get away. As our cavalry is so superior to the enemy's and as we are in friendly territory General A has little to fear from a hostile cavalry raid.

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The first thing is to send off our wounded, then the unwounded prisoners, then the slightly wounded prisoners; the seriously wounded prisoners had better be paroled if they will give their parole; if not, they might as well be left anyway.

There is no need to bring up the trains as ample supplies will be found in the town to feed the command; the necessary ammunition, however, must be brought up and distributed. The decision to leave the trains so far out may be questioned, but General A must be prepared to move promptly; he is in an unsafe place and if his command were not so tired he would do well to march tonight. As it is he must give his men a night's rest if practicable and if he is forced to retreat during the night the trains will have a start.

His arrangements as to his cavalry need no explanation. To have used in cavalry in the pursuit would have been very desirable but the use he made of it was much more important; in fact, it was imperative. General A could not risk following up the defeated enemy sufficiently to get the full benefit from the pursuit; he had to get his command together again and be prepared to meet a more serious danger from the north.

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PROBLEM 32*

With a Threatened Line of Retreat

GETTYSBURG 'GENERAL MAP
GEOLOGICAL SURVEY MAP

Situation:

General A learns by telegraph at 5 P. M. that the three divisions that have retreated from Gettysburg and Chambersburg were united between Carlisle and Harrisburg with the enemy close in their front.

At 4 A. M., September 4th, General A receives a telegram from Harrisburg stating that by a night march the army has successfuly withdrawn to Harrisburg and is preparing to defend the town.

At 6 A. M., as General A has completed his shipments and destruction at Gettysburg, a telegram is received from York Springs, dated 5.45 A. M., stating that a hostile division is marching south, advance party entering the town.

From a village southeast of Dillsburg he receives a message that a reinforced brigade was passing through Dillsburg at 5.50 A. M., moving toward York.

He knows by reports from officers' patrols that the hostile troops driven from Gettysburg yesterday have continued their retreat for at least 10 miles.

Required:

1. General A's orders.
2. His reasons.

*A continuation of Problems 28-31.

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Solution, 1st Requirement:

By an aide to brigade commanders and staff:

Assemble at headquarters.

By wire to officer in charge of trains:

March at once on Abottstown* halting five miles east of that village.

By telephone to the two battalions and cavalry on the Taneytown and Chambersburg Roads:

Withdraw to Gettysburg at once.

By wire to Colonel F, 4th Cavalry:

A hostile division reported moving south, advance party at 5.45 A. M., was entering York Springs; a hostile brigade at the same time reported passing Dillsburg moving toward York. This division will march at once on Abottstown.

Determine by which road the hostile division advances from York Springs. If by the road on Hanover delay his march as much as practicable, destroy bridges and obstruct roads.

To the Division Surgeon:

Have the sick and those unfit to march placed without delay on the train now in waiting.

The commanders and staff having assembled General A issues the following verbal order:

It is reported that the advance party of a hostile division moving south reached York Springs at 5.45 A. M., and that a brigade was passing through Dillsburg towards York at the same hour.

*Between New Oxford and York.

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We will march on Abottstown at once.

The 3d Brigade, one battalion field artillery, to be designated by the artillery brigade commander, the two troops of cavalry on outpost, 4th Battalion of Engineers, and the 1st Ambulance Company, under command of Brigadier General D, will constitute the advance guard and will march without delay on Abottstown.

The main body will follow the advance guard at one mile in the following order: 1st Infantry, Artillery Brigade (less one battalion), 1st Brigade (less 1st Infantry), 2d Brigade (less one battalion), 3 ambulance companies, signal company (less details).

The outpost will be relieved at 6.30, assembled at crossroads 586 and take their proper place in the column.

The cavalry (less two troops) are to operate on our left flank and delay the enemy's march.

The signal company will arrange to have messages received at, and forwarded from, Gettysburg to points along line of march.

The trains are already in march for Abottstown.

I will be with the reserve of the advance guard.

Telegram to Army Commander at Harrisburg:

4th Division,
Gettysburg,
4 Sept. 10, 6-15 A. M.

Chief of Staff,
1st Field Army,
Harrisburg:

A hostile division reported moving south with advance at York Springs at 5.45 this morning; at about the same hour a hostile brigade was passing Dillsburg moving on York.

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The prisoners of war and all our sick and wounded and the captured trains have been sent back to Lancaster. All ammunition and supplies captured at Gettysburg have been destroyed and the railroad interrupted.

This division is beginning its march by York Turnpike on Abottstown.

Request assistance of cavalry until past York.

A,
Major General.

An order is sent to the railroad officials to have at least two trains of empty cars, passenger and box, near the road crossing 6 miles west of York.

2d Requirement, Reasons:

General A promptly discards any idea of retreating by a route more to the south than the York Turnpike. He would gain nothing except additional marching as the enemy is as near Hanover as General A if the latter moves by Littlestown. To go further south into hostile territory does not look promising. The hard marches on short rations which would be necessary in that case would cost more men than a battle.

It is still uncertain whether the enemy is moving on Gettysburg or on the road to Hanover. If the former, General A has nothing to fear, if the latter, it is a question of his getting past the roadfork west of Abottstown before the enemy can reach there. The distances to be marched by the two opposing forces are about the same.

His order to the cavalry commander was for the purpose of securing his help in this. General A proposes to have the advance guard turn northeast at New Oxford and gain a position to defend the crossing of Conewago Creek and enable the remainder of the division to pass. This is not ordered

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at the start for further developments may show it to be impracticable. If the enemy gets there too soon General A can only fight to throw him out of the way, if he fails in this, then to retreat to the southeast and save what he can of his division. He has an even chance of defeating the hostile division and an excellent chance of saving most of his division in any case.

He is not worrying yet about the hostile brigade moving on York; that is of secondary importance at present. Its presence, however, prevents his pushing his trains far beyond Abottstown. By his previous orders his cavalry is in telegraphic connection with Gettysburg; messages will, for some time, be more conveniently sent there by wire. Hence by leaving a few mounted men of the signal corps there, with possibly a staff officer in charge, these messages can be received more quickly. The signal company on the march will establish a line from Gettysburg along the route of march probably using existing lines. The detachment looking after this work will march between the support and the reserve of the advance guard or between the reserve and the main body.

The detachment left in Gettysburg will have no trouble in rejoining.

From Harrisburg to York is only about 25 miles. The cavalry division, or a good part of it, could reach there today and would materially assist General A's escape if the enemy beats him to the road crossing. Infantry would hardly get there in time. Hence the request for the army cavalry.

The enemy only had 3 divisions in front of Harrisburg, he has sent one and one-third against General A, he has not enough force left there to capture the town. How short he is of supplies and ammunition can only be conjectured. At any rate General A has accomplished his primary mission: he has saved the capital. His mission now is to save himself.

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PROBLEM 33*

Between Two Hostile Forces

GETTYSBURG GENERAL MAP
GEOLOGICAL SURVEY MAP†

Situation:

At 7.30 A. M., General A received a message from Colonel F, 4th Cavalry, that the hostile division was advancing by the road to Hanover and was being delayed as much as possible.

At 9 A. M., General A received a message from army headquarters that the greater part of the cavalry division was en route to join him.

At 11 A. M., as the point of the advance guard reached New Oxford, it was reported that the hostile advance was two miles north of Conewago Creek, that the four bridges nearby had been destroyed, and that the 4th Cavalry was in position to delay the crossing.

General A ordered the advance guard to turn northeast to the Carlisle and Baltimore Turnpike and march to the assistance of the cavalry in delaying the hostile crossing. The artillery brigade was also ordered forward at a trot to assist, and other troops of the main body, as they came up, likewise became involved. The fighting lasted until nearly dark, by which time the hostile division had forced the

*A continuation of Problems 28–32.

†For the consideration of the tactical details connected with the working out of the decision the Geological Survey quadrangle east of the Gettysburg quadrangle would be required. The author however treats the problem along broad lines for which the maps mentioned will be found sufficient.—*Ed.*

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crossing of the Conewago and gone into bivouac near the crossroads with outposts to the east. General A's division bivouacked about four miles further east covered by outposts from the 2d Brigade. The trains had moved to a point about two miles farther east. The fighting had been severe, both sides had lost heavily; the hostile division, however, was estimated to have lost much more heavily than General A's.

At 8 P. M., Major General H, commanding the cavalry division, reported to General A that the cavalry division had started from a place about 8 miles southwest of Harrisburg at 7 A. M. to join him, had met and defeated a hostile cavalry force near Dillsburg and driven it back toward Carlisle, pursuit being made by one brigade, while the remainder of the division marched on Abottstown, that the division had gone into camp at sundown about five miles from General A's camp, and that he had come to report for orders.

Soon afterwards a message was received that a hostile brigade of infantry had reached York about 5 P. M. Another message stated that the hostile division had been joined by about a brigade of cavalry.

Required:

1. General A's orders.
2. His reasons.

Solution, 1st Requirement:

4th Division,
Near Abottstown,
4 Sept. 10, 7 P. M.

Field Orders
No. 6

1. Under the direction of the division surgeon every effort will be made to have all our wounded and sick loaded before 5 A. M. tomorrow on the trains located near where the railroad crosses the turnpike.

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The division quartermaster will have all empty wagons available reported to the division surgeon to assist in this work.

2. Issues will be made from the supply train and ammunition train at 8 P. M.

All regimental commanders will see that their deficiencies are made good, especially in ammunition.

3. Officers designated to receive orders will report at headquarters at 10 P. M.

A,
Major General.

Copies to all brigade commanders and staff, Col. F, 4th Cav., Maj. G, Engrs., Capt. H, S. C. and commander of trains.

4th Division,
Near Abottstown,
4 Sept. 10, 10 P. M.

Field Orders
No. 7

Troops
a. Advance Guard:
Brig. Gen. B
1st Brig. (less 1st Inf.)
4th Cav.
8th F. A. (less 2d Bn.)

b. Main body—in order of march:
1st Inf.
2d Bn. 8th F. A.
3d Brig.
Sig. Co. D.
4th Amb. Co.

1. The enemy has probably been reinforced by about a brigade of cavalry.

A brigade of hostile infantry is reported near YORK.

The 1st Cavalry Division has gone into bivouac near here and has reported for duty with this division.

2. This division will continue the march on YORK tomorrow morning.

3 **a**. The advance guard will clear camp by 5 A. M., and march on YORK.

b. The main body will follow the advance guard at 1000 yards.

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c. Rear Guard: Maj. Gen. H 1st Cav. Div. 2d Brig. 7th F. A. 4th Bn. Engrs. 1st, 2d, 3d Amb. Cos.

c. The rear guard will hold the enemy in check and resist his advance until the road through YORK is opened.

4. The trains will follow the main body at 1000 yards.

5. I will be at the head of the main body.

A,
Major General.

Copies to officers sent to receive orders.

2d Requirement, Reasons:

The first question naturally is: why not attack the hostile division in the morning? With his reinforcements General A has a decided superiority and should be able to defeat the division and then with his entire force march on York. General A's move on Gettysburg may have seemed rash while now his plan, at first sight, seems timid.

General A realizes that he has a decided superiority and that he should be able to defeat decisively the hostile division; it might, however, take all day in which to do it. The hostile brigade at York has cut his line of communication. No more ammunition can be received until he has reopened the road. Yesterday he fought a severe battle and must have made a serious inroad on the ammunition with his command. To fight another today, on the offensive, with no resupply at hand would result in reducing his supply to a dangerously low point, especially in artillery ammunition.

The enemy's main army was only about 25 miles away yesterday morning. The hostile brigade at York may be reinforced before General A can get there. The enemy's line of supply as far as Gettysburg is now reopened; he can get ammunition.

When General A went to Gettysburg the situation was critical and he was justified in taking big chances for greater

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results. The situation now is quite different. His command has had a hard time of it since leaving York; it can get no rest until he can regain that place. If he fights he cannot hope to destroy the hostile division. It is prepared for battle and if defeated it has two safe lines of retreat: to Gettysburg and back to the main army.

General A's preponderance in cavalry should make such a retreat costly but there is but little probability that the hostile division would not be able to make good its escape. Every additional day of hard work, until General A can give his command a rest, will add greatly to the number of his disabled, aside from his wounded.

The strongest reasons, however, for not attacking are that conditions do not demand it; the enemy is on his line of supply and may be reinforced, and General A's ammunition may get too low if he fights unnecessarily with another unavoidable battle on his hands.

If the enemy pursues General H, and General A succeeds promptly in clearing York with his trains and in pushing the cars loaded with wounded past the place, he can return to General H's assistance and, with no risk, probably win an easy victory.

THE END.

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